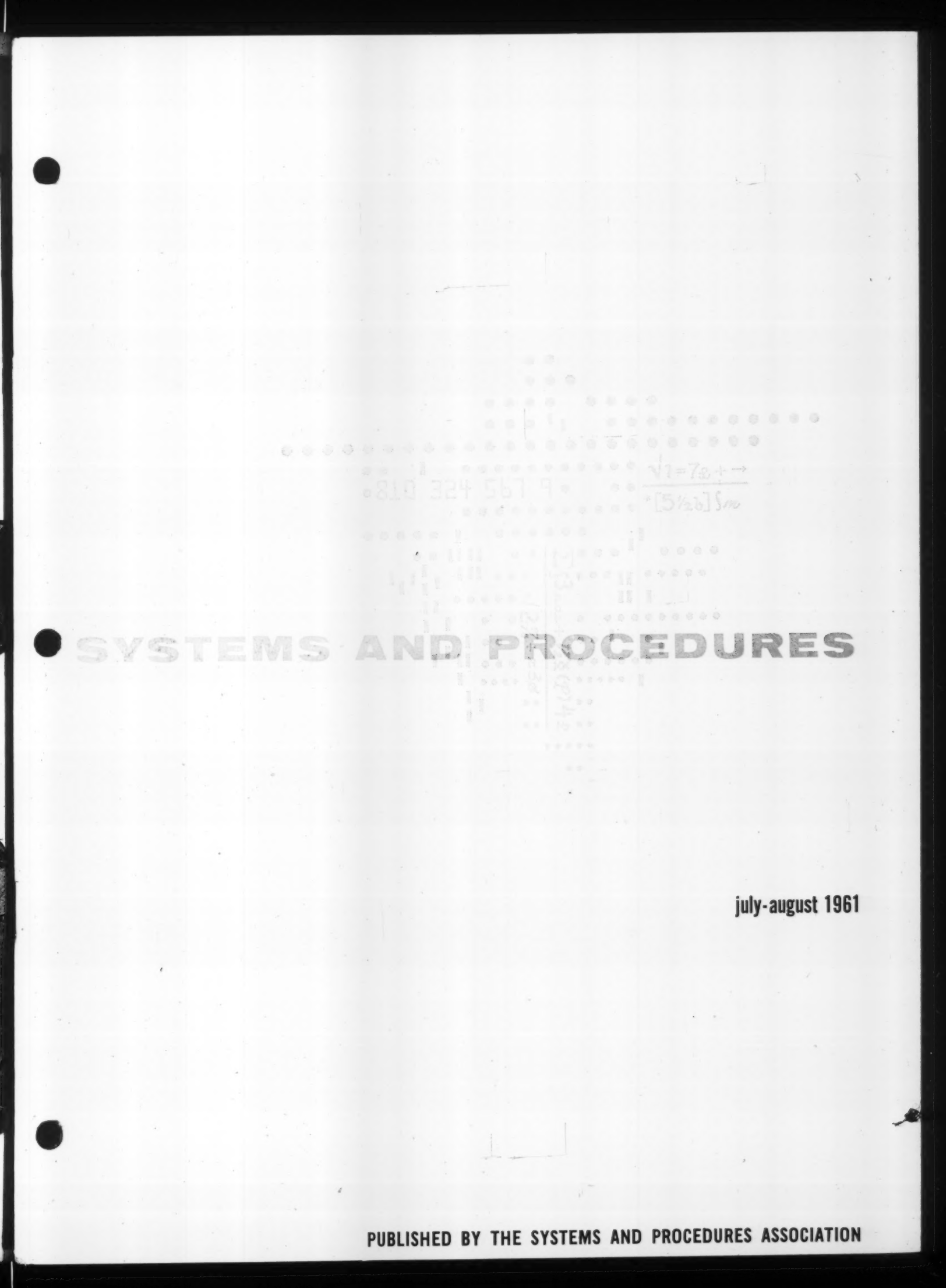

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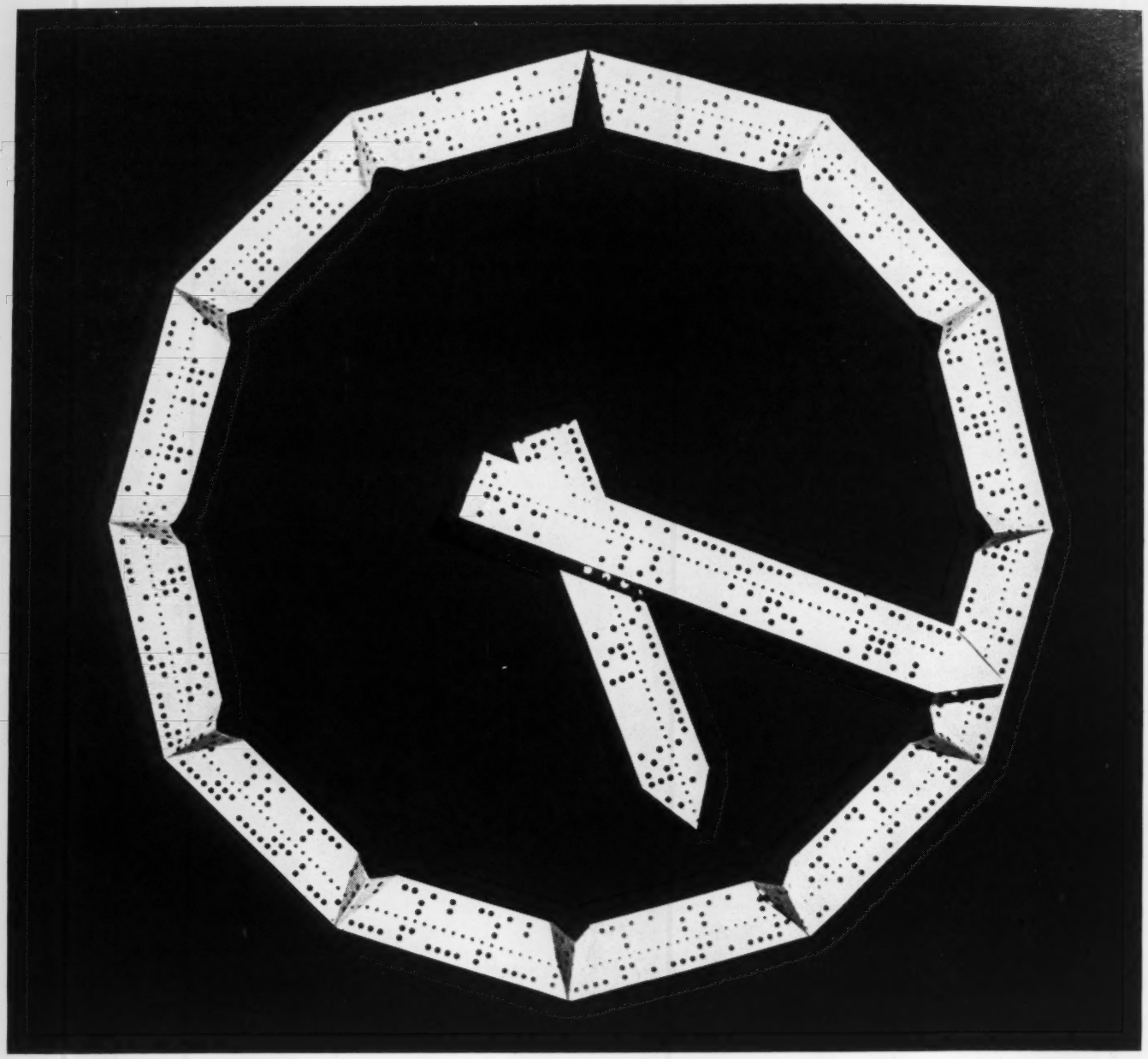

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CONTENTS

2 **A File Cabinet Utilization Survey**

"The result of the . . . survey and . . . clean-up were gratifying enough to make periodic review a permanent requirement."

J. S. Hogan

4 **Organizing the Systems and Procedures Department**

(Part IV of a 5-part article)

A. Richard De Luca

19 **An Integrated Data Processing Application**

"The integration and simplification of all the parts of a system is the basic aim of systems . . . analysis."

J. M. Otterbein

31 **How Methods Improvement Can Increase Your Profit Margin**

"Methods Improvement is to determine by analysis, the most efficient and economical way to do a job."

Theodore C. Strauss

35 **Book Reviews**

The Arithmetic of Automatic Computers
Electronic Data Processing: An Introduction
Landmarks of Tomorrow
Managing America's Economic Explosion
Modern Production Management
Practical Problems in Business Statistics

39 **Editorial**

The Administrative Processes

Don Titus

ADVERTISERS

20, 21	International Business Machines Corporation
Back Cover (Inside)	International Systems Meeting
Front Cover (Inside)	The National Cash Register Company
40	The Standard Register Company
Back Cover (Outside)	Wheeldex & Simpla Products, Inc.

A File Cabinet Utilization Survey

J. S. Hogan

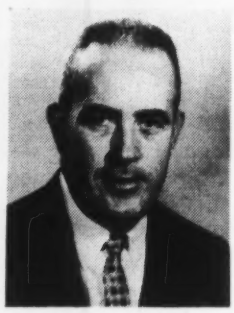
● Sperry Management recently instructed our Surface Armament Division to take measures to insure that we were obtaining good file cabinet utilization. The cost reduction opportunities were two-fold:

1) Capital investment would be reduced by diverting files to new activities instead of purchasing them.

2) The cost of space required to house unnecessary file cabinets would be saved.

When the records retention schedules were established, it was concluded that most of the file storage problems had been solved. This was only the start of a good records management program. While the published schedules define the office archives and retention life of documents, they are not in themselves enough. Like the squirrel who stores nuts during the fall and then can't eat them because it forgets where they are hidden, humans like to save things that in good business practice represent a loss. They need a reminder that file schedules are to be observed and it is management's job to see that they are. One method is a periodic survey of the file equipment to insure that it is being efficiently utilized. So, armed with a copy of the records retention schedule, two-man teams proceeded to examine each file drawer in every cabinet.

The program for the survey went like this. A form was prepared to list each delinquency with a specific reference to the schedule. It also provided for identifying the file, its location, and the department and supervisor. Supervisors were required to observe the survey of their files. They were given a duplicate copy of the form listing the violations so that remedial action could be taken



J. S. HOGAN is a past President of the Long Island chapter of the Systems and Procedures Association and was the recipient of their 1959-1960 award (plaque) for outstanding service. He has served as Chairman of its Research and Publications committees. He is a former editor of the chapter's publication Business Systems Engineer. *Mr. Hogan has a B.B.A. from Pace College, New York and several (5-10) years experience in writing general, accounting, and operating procedures. During his military service, he was an administrative Warrant Officer, He is presently supervisor of Organization and Procedures, Surface Armament Division, Sperry Gyroscope Company, Division of Sperry Rand Corporation.*

promptly. The survey did not end at this point. Top management was informed when the examination of files was completed and given a report of the findings. Instructions were then issued to comply with the survey findings; within two weeks the file cabinets would be re-examined and instructions issued for the disposition of surplus files. We discovered, of course, that the files contained material that should have long since been sent to archives or destroyed as well as items that were never authorized or intended to be kept. Some of the results and recommendations will be of interest to the reader:

1. Stationery and form supplies were found throughout the files; sometimes for convenience, other times for stockpiling. Supervisors were instructed to disapprove requisitions for more than a two-weeks' supply and to confine storage to desks and stationery cabinets. Tight control will reduce the company's investment.

2. Manuals, library and reference books do *not* belong in files. They are intended for and should be available for use.

3. Files contained substantial quantities of catalogs because portions of file space were assigned to *individuals*. This builds up duplication and can be reduced by keeping catalogs at a central department point on less expensive shelving.

4. A few hours should be set aside every six months for file, desk, and area cleaning purposes. This would make employees more aware of the need for this clean-up and give them the time to accomplish the task.

5. Department heads, managers, etc., should be assigned other than standard file cabinets only if they actually need them. They have become prestige or status symbols.

6. A department's filing equipment should be subjected to a rigid records retention schedule review before additional equipment is authorized.

7. The records retention schedule and procedure for sending material to archives should be emphasized to the supervisors and secretaries.

8. Malfunctioning, old, or decrepit files should be repaired and refinished for utilization and appearance. This may also create the incentive to use and not abuse this equipment.

9. A small storage cabinet, with lock, should be issued to design, planning, and other departments using expensive equipment.

10. Manufacturers should be invited to consider a product improvement that would add a lock and bar to their file cabinets for storage of classified material by defense contractors.

The result of the file utilization survey and subsequent clean-up were gratifying enough to make periodic review a permanent requirement. **s/p/a**

Changing Your Address?

Notice of change of address for the Systems and Procedures Magazine (except from members in chapters) should be received in the Systems and Procedures Association office, 817 Penobscot Building, Detroit 26, Michigan, before the first of the month preceding the month of issue. For instance, if you desire the address changed for your May/June issue, we should be notified of your new address before May 1. *Be sure to include your postal zone as well as your old and new address.* Members in chapters should route their change in address through their chapter secretaries.

Organizing the Systems and Procedures Department

PART IV

A. Richard De Luca

Basic Policy Questions

● Before the organization of a systems and procedures department can proceed, a number of important policy questions must be answered:

1. What are the objectives of the systems department? Is the systems staff to serve as merely a procedures-writing unit and forms control agency—in effect a "clerical methods improvement staff?" Or does management envision the staff's objectives in broader terms, such as organization planning, information flow analysis, policy formulation, systems development, administrative cost control—that is to say, as a truly *administrative* staff, devoted to serving *all* management levels in the enterprise?

2. How is the workload of the department to be developed? How much initiative should rest with the staff? Will the systems and procedures organization operate on a "service" basis, conducting studies and surveys as requested by operating managers? Or will the staff follow a *planned* program—one developed by the staff itself and approved by top management?[1]

3. What will be the major relationships of the systems group to other staff and line departments? Several highly important relationship areas must be resolved and clearly defined:

   a. To what degree is the systems department responsible for the internal administrative and clerical methods of other departments? Will it conduct all *internal* systems and procedures-type work for departments, in addition to the inter-organizational work normally expected of it? Or, will it concentrate upon only the inter-organizational problems and projects? Perhaps the systems staff is to be so organized that it can provide counsel and assistance on intra-departmental problems while assigning the *major* responsibility for such work to

1. Workshop (8th), p. 144.

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personnel from the affected departments.

b. What relationships are to exist between the Systems and Procedures Department and the internal auditing staff? Is the auditing of policies and procedures to become part of the systems and procedures staff's responsibility? Or is this activity to be conducted by auditors operating independently of the systems and procedures unit?

c. How will the activities of the systems and procedures organization relate to the tabulating and electronic data processing operations? Will the systems staff provide the pre-analysis required for effective EAM (tabulating) and EDP operation? What will be the organizational and *functional* relationships between the systems staff and these increasingly important data-processing organizations?

4. Will the systems group be responsible for coordinating, monitoring, and/or approving *all* changes to inter-organizational procedures, as proposed by other departments?

5. May the systems staff appeal the rejection of proposals developed by its members? If so, to whom, and under what conditions?[2]

6. Which specific functions will the systems organization perform? Will the types of problems to be studied require the use of "systems specialists" such as forms designers, EDP programmers, etc.?

7. Will systems personnel be assigned to standing membership on any specific permanent committees, e.g., suggestion committee, planning committee, cost reduction committee?

8. Will the systems staff be expected to carry *full* responsibility for both development and installation activities? Or will cooperative efforts on the part of affected operating organizations be fostered?

Several of these questions should have been thought out and answered in the course of determining where in the enterprise the Systems and Procedures Department should be placed. The reader will remember that, in the preceding chapter, a key question raised dealt with "the nature and scope of the systems group's activities."

Formulation of specific policy statements dealing with each area questioned above will serve as part of the sound base from which a systems and procedures organization can be constructed. Such a base must, of necessity, consist of three elements:

1. Basic POLICY statements relating to the questions stated above.

2. A clear, concise statement of the OBJECTIVES which the proposed organization will strive to achieve.

3. A definitive breakdown of the specific FUNCTIONS which the organization should perform in order to accomplish its stated objectives.

The first of these questions has been dealt with in the preceding paragraphs. Consideration will now be given to the remaining two questions.

Determine the Objectives of the Systems and Procedures Organization

In any type of organization planning, actual creation of the organization structure and determination of personnel requirements must be preceded by careful development of the proposed objectives which the new organization will aim to accomplish. The reader will note that this question of objectives was the *first* "policy question" raised in the pre-organizing activity described in the preceding section of this article.

Because it is so important, and constitutes the "foundation" upon which the systems and procedures organization will be built, it is presented in some detail in the following paragraphs.

2. Workshop (8th), p. 149.

What specific objectives do systems and procedures units establish as goals? A presentation of such objectives, as actually promulgated by existent systems organizations, will provide the reader with adequate material, from which he may proceed to define his own particular systems and procedures objectives.

Mr. C. J. Costello, Manager of the Organization and Procedures Department, Marathon Corporation, has summarized his systems and procedures objectives as:

1. Finding better ways of executing useful activities—more for the same or less cost, the same for less cost, or more for justifiably increased cost, considering the value to the company of the benefits attained.

2. Outright elimination of useless, unjustified activities.[3]

Mr. Costello also expressed, as a long-range goal, ". . . the achievement of a balanced, effective and seasoned staff and a broad plan for their assignment which promises the greatest company return over and above the cost of the function. At 5 per cent net profit on sales, savings from systems work of $1000 are equal in profit effect to a sales increase of $20,000. Moreover, the systems saving is repetitive."[4]

A British practitioner of systems and procedures management has enumerated the following objectives of a systems organization:

1. To inquire into the general effectiveness of the executive machinery (this will, he argues, stir managers to greater self-improvement efforts).

2. To examine and design the clerical organization, methods, procedures, and related activities.

3. To insure the usefulness of all existing jobs.

4. To insure that the records system is designed as efficiently as possible towards helping all levels of management to conduct the business effectively.

5. To make sure that the organization of work is *helping* the records system, not hindering it.

6. To provide for the proper training of office personnel.

7. To insure that output meets expectations.

8. To develop good—but not necessarily perfect—detailed methods and procedures.[5]

Round-table discussions by systems managers have produced the following typical statements of systems and procedures objectives:[6]

> The professional systems man has two key objectives . . . improved management intelligence and . . . increased productivity . . . . the underlying objective of the systems organization is to provide good administrative control in conjunction with low cost processing of information . . . systems and procedures should and can create a cooperative relationship between line departments by encouraging participation in systems development on the part of line management.

A special American Management Association study of the systems function contains the following statements of systems objectives:[7]

> . . . the study, analysis, and improvement of the systems which service, control, and coordinate all the operations of the enterprise.

---

3. C. J. Costello, "The Task of Systems Management". *NACA Bulletin* (February 1955), p. 835. Hereafter cited as *Costello*.

4. Ibid, p. 834.

5. Neil C. Pollack, in *Ideas For Management*. 11th International Systems Meeting (Systems and Procedures Association, Detroit, 1959), pp. 186-189.

6. *Ideas For Management*. 10th International Systems Meeting. (Systems and Procedures Association, Detroit, 1958), passim. Hereafter cited as *Ideas For Management (10th)*.

7. Organizing, pp. 44-42, 117.

> . . . the design of planning tools for giving direction to the enterprise's activities. That . . . would include assisting in formulating the policies to act as guides and constraints for the organization's thought and action, defining the various practices which describe the various methods that could be used to accomplish the job, and the determining of the procedures which govern the operations comprising a system.
>
> . . . translating management policy into action and finding the most effective, the simplest, and the cheapest means for accomplishing every task.
>
> . . . the development of . . . a complex assortment of accounting and statistical data . . . into a logical and compact body of management intelligence, stemming from a fully integrated data-processing system.

The Director of Systems and Procedures of the Canadian Broadcasting Corporation defines his organization's long-range objectives as:[8]

> . . . A complete examination of systems and procedures throughout the Corporation with recommendations where practicable.
>
> . . . A continuing follow-up on all our efforts.
>
> . . . The development of manuals of policy, instruction, and procedures for all areas of the Corporation's activities.
>
> . . . To make our forms control completely effective on a reasonable basis.
>
> . . . To maintain a watching brief on all types of inter and intra-office communications.
>
> . . . To ensure that the best standards are developed, maintained, and used in our office practices.
>
> . . . To provide quick and effective service to all who request our assistance.
>
> . . . Last, but not least, while doing this to develop and train our own people in the interests of their advancement and as a part of future executive development.

How can this impressive array of "objectives" be organized to serve as an official presentation of the systems and procedures organization's goals? It may be well to remind the reader, at this point, that the facility with which the organizer will be able to work relates directly to the amount of thought and care he utilizes in the process of formulating the systems and procedures unit's objectives. Development of this "cornerstone" document should proceed along these lines:

1. Objectives should be listed in descending order, from the broadest and most critical to the more specific and limited objectives.
2. The objectives should constitute a *logical* pattern; they should be so arranged, that the planner can logically proceed to the next stage of the organizing process: namely, determination of the specific functions (activities) which the systems and procedures organization must perform, in order to effectively accomplish its objectives.

Establish Specific Systems and Procedures Functions

The several techniques employed by systems and procedures personnel to accomplish their various goals were described in Part II. Subsequently, a statistical summary of the extent to which these techniques are actually used by systems personnel was presented in Part III, as an indication of the practicality of these various systems and procedures activities. The organizer of the systems and procedures organization is thus provided with a rich storehouse of data and information for use in determining the precise manner through which each systems and procedures objective is to be attained.

This study of specific techniques, logically related to each stated objective, leads next to the formulation of a statement of specific "functions and responsibilities" of the systems organization—usually in the form of a position guide for the manager of the proposed organization.

These position guides most frequently consist of three sections or parts:

Basic Functions

Duties and Responsibilities

Organizational Relationships

Each of these guides possesses some outstanding features worthy of careful study on the part of the organizer. For example:

8. Dan G. Crone, *The Approach to Systems and Procedures.* (Booklet, Canadian Broadcasting Corporation, Ottawa, Ontario, Canada, 1958), p. 21.

Guide No. 1—Manager, Systems Department.

Carefully spells out relationships with other management personnel, taking care to point out in some detail the *staff* nature of the function. It is further noted that the writer of this guide emphasizes *active participation* by line management in the systems task.

Guide No. 2—Vice President—Organization

In this case, the broader systems objectives described in a preceding section of this part are to be implemented. Note that organization planning and analysis play prominent roles in this case. Policy formulation and development constitutes a second major activity.

Guide No. 3—Administrative Engineering Manager

In this case, a top-management planning organization is being established. The writer of this guide emphasizes the *planning* nature and aspects of the systems operation, as he envisions it.

Guide No. 4—Manager, Organization and Procedures Office.

Again we find an emphasis upon the "top-management coordinating agency" concept; emphasis upon the *staff* nature of the work; and use of most of the basic systems and procedures tools described in Part II.

Guide No. 5—Director of Systems and Procedures.

Emphasis is immediately placed upon a *planned*, "coordinated systems and procedures program." The concept of functional staff control is emphasized. The key relationships involved are clearly defined.

Guide No. 6—Clerical Methods Officer.

Here is an example of an earlier guide, taken from the organization manual of a large British organization in 1947. Heavy emphasis is placed upon analysis of *clerical* operations and techniques—an area which has now developed into one of *secondary* importance, as will be noted by a perusal of the preceding guides. A comparison of this description of systems and procedures functions with the previous guides provides firm evidence of the shift in emphasis from the concept of systems as a clerical "service" function to one of the systems unit as a staff activity devoted to the improvement of the *management* caliber in the enterprise.

When the position guides have been developed for the key managerial personnel of the systems and procedures organization, the organizer is in a position to formulate the organization structure.

Develop the Organization Structure

How should the systems and procedures staff be organized? The following alternatives must be considered before drawing the organization chart for the unit:

Centralized—Creation of a single, central systems staff which services all elements of the company.

Decentralized—Establishment of autonomous systems units, by geographical location, each unit reporting to a member of the local top management staff.

Departmental—Creation of autonomous systems units in specific departments, such as accounting or purchasing.

Specialized—Development of a systems organization designed to perform limited, highly specialized functions such as forms design and control, manual maintenance, electronic data processing, programming, etc.

Combination—Creation of a central systems staff, employing specialists and general analysts, which also controls personnel operating in specific departments, or in various geographical locations.

How should an executive decide which organization will best serve his needs? A high-lighting of the principal features of each organization type listed above will be of some assistance in making this determination.

Centralized

When the systems unit operates out of a centrally located organization, serving all operating and staff departments in advisory, investigative, and consultive capacities, its effectiveness is determined by the following factors:

1. How large is the organization? Is the physical distribution of the enterprise compact? If the organization consists of many operating divisions, located over a large geographical area, a centralized systems group may fail to develop the intimate knowledge of operating practices and problems which is so essential to any systems and procedures work.
2. Is the enterprise a complex entity? A central systems and procedures staff can operate most effectively in a relatively simple type organization, since its span of operation can remain manageable. But, as a company expands, diversifies and organizes new functions, the demands for the systems group's services become so great and complex as to severely restrict its effectiveness. The systems and procedures manager soon finds himself understaffed, and classified as the chief company "fire-fighter." Such conditions soon lead to the demoralization and decay of the systems and procedures department.
3. Do the paperwork operations of the company lend themselves to standardization? Neuschel feels that: ". . . a headquarters staff should be responsible for those procedures which are to be standardized throughout the company."[9]

Decentralized

The use of individual, autonomous systems staffs operating within geographically separated organizational components is often a necessity. This is especially true in the larger, more complex companies where an operating division is, in effect, a separate, independent entity. Decentralizing the systems staff by location fosters the operating effectiveness of each systems and procedures group through its becoming an integral component of the organization within which it functions.

A completely decentralized systems function, however, possesses a few disadvantages. In the absence of a central controlling agent (or office), variations in basic operating procedures, duplications of effort, and great differences in the operating effectiveness of the separate systems and procedures units are inevitable.

Departmental

Use of autonomous, departmental systems and procedures units presents a few noteworthy features.

1. The closeness of systems men to the operating conditions which they must study is a great aid to effective functioning of such a staff. Their daily contact with operating managers and personnel has the effect of winning the confidence of those who must accept and apply the systems group's recommendations and procedures.
2. In very large or complex organizations the range of systems work is so great as to necessitate the establishment of decentralized, departmental systems and procedures units.
3. Performance of general systems and procedures work for a department broadens the experience and management potential of the systems staff personnel.

If systems groups report directly to operating managers, however, several limitations must be pointed out. The most serious defect created by such arrangements is the development of an internal bias on the part of the systems and procedures analyst, which may greatly impair his objectivity when dealing with inter-organizational problems. Another, more subtle, weakness is also present—namely, the fact that many operating managers are not sufficiently acquainted with the basic requirements of a systems and procedures position to properly select personnel for the accomplishment of creative, organized and professional systems work.

---

9. Neuschel, p. 58.

Still another serious weakness is inherent in the assignment of systems and procedures personnel under the sole and direct control of an operating manager. As a *staff assistant*, the systems analyst who reports directly to a line manager will very often be used to perform many clerical, routine, and special non-systems functions. This situation seriously reduces his effectiveness and limits his professional growth. It has been stated,[10]

> "A good systems operation is a big money-maker. The systems man who saves his company less than $25,000.00 a year is not doing his job, and often $100,000.00 a year is closer to his value . . .".

This writer's personal experience testifies to the validity of this claim. But it is necessary to emphasize that the productive ability of *any* systems man cannot be exploited to its maximum, if he devotes only a fraction of his time, in disjointed portions, to the pursuit of his primary objectives—namely, the improvement of managerial performance and the reduction of operating costs.

These notes of caution lead to another critical defect of departmentally controlled systems organization, namely "firefighting"—the bane of the systems and procedures profession. An operating manager reasons thusly: "I devote a great deal of my time to resolving 'immediate' operating problems but I have a staff assistant whose *specialty* is problem analysis and resolution—namely, the systems man. Therefore, I will delegate the job of handling these irritations for me". —And, unfortunately for the systems man, his training and experience, coupled with familiarity with the operations of the department, *do* prove him to be an excellent problem-solver. The result? Assignment of more "fires" to quench! The net result of this inevitable and historical "chain-reaction" is the *failure* of the systems man to harvest the fruits of any *planned* systems program. Thus, much wasteful use of manpower, money, material, machines, and methods continues—simply because no one has uncovered this waste!

The assignment of systems personnel to specific operating areas—departments, if you will—offers the advantages of better systems development through more intimate familiarity with operating personnel and problems, acquisition of a broader knowledge of specific organizational elements on the part of the systems men so assigned, and easier "selling" of the systems and procedures results, i.e., recommendations, procedures, etc. But these "area" systems men should report directly to, and receive their orders from, an independent systems manager, if they are to overcome the serious defects stated above and function with maximum effectiveness.

Specialized

The composition of a systems and procedures unit, especially in larger organizations, will often include personnel who are specialists in certain limited areas of systems work. These personnel are most commonly engaged in one of the following "specialties":

Forms design and control

Punched card and tape applications

Electronic data processing equipment

Reproduction equipment and methods

Records retention and control

Since each of these functions has been discussed in Part II, no further elaboration is required at this point. A few observations relating to the role of "specialized" systems organization should suffice:

1. While the use of individual specialists within the framework of operating and staff departments is a frequent occurrence, e.g., an EDP computer programmer working for an EDP department, or a reproduction specialist employed as a staff assistant to a manager of publications, few (if any) systems organizations will be found in actual practice, which consist *exclusively* of such specialists.
2. The primary mission of any specialist is one of conducting *technical* analyses and rendering technical advice and assistance. Such personnel ordinarily are not qualified by training or experience to perform normal systems functions such as the detailed operations analysis which is a prerequisite

10. Athearn, p. 14.

to the stage at which their special knowledge and abilities can be profitably utilized. These specialists must therefore rely upon the groundwork laid for them by the systems and procedures "generalists." This relationship must be a highly cooperative teamwork endeavor.

3. In summary, it may be concluded that the operation of a purely "specialized" systems organization is impractical, although the systems specialist does play a highly useful role in any systems and procedures organization.

Combination

Analysis of the "pure" forms of systems and procedures organization—centralized, decentralized, departmental, and specialist—has revealed a number of weaknesses inherent in each. Hence, a combination of the best features of each pure organization type has frequently been developed in order to overcome those major defects.

How is this "combination" type of systems and procedures organization formed? It is built upon a twofold foundation:

1. A central systems and procedures organization, reporting directly to a member of top management (this requirement has been dealt with at length in Part III.

2. All systems men, regardless of physical location, should report to, and be controlled by, the systems and procedures manager. This qualification counterbalances the defects of both departmental and decentralized forms of organization, by offering the following advantages:

   a. Full coordination is assured between analysts engaged in related systems projects. Duplication of effort and development of conflicting, non-standard procedures are thereby avoided.

   b. Since all analysts are under the control of a single systems manager, rather than reporting to several operating managers, more effective utilization of systems and procedures manpower is effected through a greater unity of purpose.

   c. Systems personnel working in a functional area can perform more objectively, since they are not faced with the dilemma of "pleasing the boss" (the operating manager, whose bias is usually evident), or else risking their positions as staff subordinates.

   d. Selection of personnel to comprise the systems and procedures staff is improved, since all the hiring is accomplished by the Systems Manager—normally the individual in the organization most qualified for this task—and very often the *only* individual so qualified!

   e. A broader range of experience is available for group efforts required on major problems.

   f. Unified, central control over all systems personnel in the organization also allows greater coverage of overall company systems needs and fosters more rapid development of systems and procedures analysts into potential executives.

Based upon the "foundation blocks" described above, a "combination type" systems and procedures organization is composed of three operating groups:

1. First come the "generalists"—those analysts who work out of the central systems office on projects and programs covering a wide range of activities: organizational analysis and research, broad systems studies and developments, formulation of top-management policy instructions and inter-departmental systems and procedures, etc.

2. Next come the systems "area" men—analysts who are assigned to specific departments for the purpose of working out all systems and procedures problems within their assigned areas of responsibility. These "area" personnel are also "generalists"; they rotate positions with the analysts from the

central systems group, thereby acquiring broad background.

3. A third group—the "specialists"—operate out of the central systems and procedures office, providing technical assistance to all other systems personnel. These specialists are most effectively utilized by giving them responsibility for directing the development of programs relating to their particular field of interest. Thus, the company forms control program is monitored by the forms specialist; an EDP specialist establishes and guides systems studies relating to paperwork automation; the records specialist oversees the company's records management and retention program.

The operation of such a "combination" type of systems and procedures organization offers the several advantages already described, over the previously described organizations. Furthermore, the most effective utilization of systems personnel must be pointed out as an outstanding advantage. Since all systems and procedures workload is controlled by a single agency which represents top company management, assurance is given that the systems personnel are engaged in those projects and programs which will be most beneficial to the organization *as a whole.*

Size of the Systems and Procedures Staff

How can one determine the size of a systems and procedures department? There are a few factors relating to the nature of the systems and procedures function which preclude any simple, "scientific" or clear-cut technique for making this determination.

First, systems and procedures is a staff, as opposed to a line function. The majority of systems and procedures activities, regardless of scope, are non-routine in nature. The time required to perform even the relatively "standardized" tasks, such as forms design, will vary immensely with successive performances.

Second, the universal use of systems and procedures personnel as troubleshooters and "firefighters" by management renders the predetermination and control of workload highly difficult.

In the absence of any "formulae" for determining systems and procedures staff size, a number of "conditions" may be used as guides for making this determination:

Internal Conditions

The scope and depth of systems and procedures activities.

The amount of workload generated by the systems and procedures staff.

The competence of the systems staff.

External Conditions

The size, complexity, and general organizational plan of the company.

The number and type of assignments generated by all levels of company management.

The amount and type of opposition to the systems and procedures department within the company.

The competence of company management.[11]

A brief examination of each condition will clarify its relation to the question of determining systems and procedures staff size.

Internal Conditions

1. Scope and Depth of Systems and Procedures Activities

How many of the functions discussed in Part II does top management expect the systems organization to perform? For each function, the question must be raised: How much manpower will be required to effectively perform this function? How intensively should this function be performed? Some operations, once established, may require only part-time or intermittent activity. Equipment standardization often fits this category. Other functions can only be effective if they are consistently and intensively pursued. Systems analysis, forms control, and procedures writing are so categorized.

11. Workship (8th), p. 151, and Lazzaro, p. 19.

2. Workload Generated by Systems and Procedures Staff

   The analytical nature of systems and procedures work inevitably uncovers many areas which offer great potential for improvement. If the systems manager is given some freedom to partially develop his own workload by a sympathetic management, then a definite personnel allowance should be made to insure that the *planned* programs and projects will be carried out within reasonable periods of time. (More will be said about the significance of Planned Systems Programs in Part V.)

3. Competence of the System Staff

   A senior analyst with several years of diverse systems experience will handle a number of assignments simultaneously, while a junior analyst—one just "breaking into" the systems field—can only perform a fraction of this work with any reasonable degree of effectiveness.

External Conditions

1. Size and Complexity of the Company

   As the number of people in a company increases, the working inter-relationships involved in carrying out basic functional operations increase in *geometrical* proportion to the rise in personnel. The resultant need for coordination and systemization makes itself all too evident as witnessed by the growth of "problem areas" and examples of wasted manpower, materials, and equipment. Thus, while a staff of one or two systems personnel might adequately handle the systems needs of a small organization with a total manpower complement of a few hundred, a staff several times as large will often experience difficulty handling all the demands made for its services in a company of 500 people.

   Complexity of organization, and the diversity of functions performed within the organization, can also be positively related to this problem of determining the size of the systems and procedures staff.

2. Workload Generated by Company Management

   Since the systems and procedures group exists to perform the ultimate or most general management "service" function, the demands placed upon it by operating management must be honored, if the group's work is to be accepted and applied by operating managers. Procedures personnel must *always* be available, at least for consultation. A systems manager prefers to have all management requests channeled through his office for evaluation and programming. But he must build sufficient flexibility into his own organization, practically speaking, to permit absorption of "priority" work without seriously impairing major programs currently under development by his organization.

3. Opposition to the Systems and Procedures Department

   What is the management "atmosphere" in which the systems group must function? If a hostile attitude prevails—and this will often be the case, as when the systems analysts are regarded as intruders or hyper-critical "efficiency experts"—then it may be wisest to begin slowly, and with a small staff. In such cases, the systems group can best pave the way for growth by concentrating on a few broad projects which will serve the dual purposes of proving the staff's worth and gaining the confidence of company management.

4. Competence of Company Management

   The systems analyst usually devotes a major portion of his time to serving one group of individuals in the enterprise—the operating managers. Coordination, investigation, procedural development, all are performed in concert with affected managers and supervisors. It is obvious, then, that supervisors who are more skilled in the organization of work, and who know and can clearly articulate the workings of their functions, will minimize the systems and procedures staff's workload.

In contrast, when supervisors are not thoroughly conversant with the operating details of their units or lack organizational skill, the systems man must engage in more fact-finding, interview a larger number of personnel, and devote a significant amount of time to psychologically "orienting" the supervisor so that he will be able to competently install and apply the procedural recommendations of the analyst. Systems men naturally prefer working with the more competent supervisors and managers; their job is made easier, and a spirit of teamwork is usually engendered, which has long-lasting beneficial effects on the organization as a whole.

All of the above factors must be given consideration, when determining the size of the systems and procedures organization.

Several writers have ventured to present estimates of the size of systems and procedures units in terms of the ratio of systems personnel to office or clerical personnel. The extreme variations in such estimates indicate that this "yardstick" is not very reliable.

For example:

1. The author of one of the earlier works on systems and procedures established a desirable ratio of 1 systems man to every 25 clerical employees.[12]

2. A student of the systems function later recommended the ratio of 1 systems man per every *500* workers! He also presented an alternative: in terms of payroll costs, ½ of 1 per cent of the total clerical payroll should be consigned as salaries for systems and procedures personnel.[13]

3. In 1955, the American Management Association conducted a survey in which a few hundred companies were queried on the sizes of their systems and procedures staffs. The results of that survey are shown in Table 1 below.

4. Finally, in a 1959 survey sponsored by the Systems and Procedures Association, the responses of 1,400 companies produced the results depicted in Table 2 below. These results tend to confirm this writer's theory—namely, that use of an arbitrary ratio of systems personnel to "clerical," "office" or any other employee group would not constitute a sound method of determining the size of the systems organization. Rather, proper systems staff size can be much more accurately determined through a careful consideration of the functions to be performed by the systems and procedures unit, further modified in the light of the "external" and "internal" factors described above, which also have a significant bearing upon the number of systems personnel required.

When the systems and procedures manpower requirements have been formulated, the organizer must proceed to the next task—selection of the personnel component.

Select the Systems and Procedures Personnel Component

A systems and procedures organization should consist of the following key personnel:

1. The Systems Manager.

2. Senior systems analysts.

   a. Generalists—familiar with, and capable in applying, most of the systems techniques described in Part II.

   b. Specialists—Systems analysts with special training and abilities in the "specialties" of systems work—EDP programming, forms design, etc.

3. Junior systems analysts.

What will be required of these personnel? What specific tasks will they be required to

12. Irwin A. Herrman, *Office Methods, Systems and Procedures* (Ronald Press, New York, 1950), p. 4.

13. James J. Stack, Jr., "*Managerial Control Through A Methods Department*" (Unpublished Masters' Thesis, Graduate School of Business Administration, New York University, 1953), p. 44.

TABLE 1

Management Use of Systems and Procedures Personnel

(1955)

Size of Company (Number of Employees)	Number of Systems Men Per 100 Office Employees
Less than 250	2.0
250—500	1.1
500—2000	0.8
2000—5000	0.5
5000 or more	0.3
Median—All Companies	1.0

Source: *Organizing For Effective Systems Planning and Control.* Special Report No. 12 (American Management Association, New York, 1956), p. 191.

TABLE 2

Size of Systems and Procedures Department

(1959)

Number of Systems Men	NUMBER OF EMPLOYEES INFLUENCED BY SYSTEMS GROUP ACTION				
	500 or less	501-1500	1501-3000	3001-6000	Over 6000
None	7%	3%	2%	—	—
1—3	75%	52%	33%	24%	13%
4—6	12%	26%	26%	28%	19%
7 and over	6%	19%	39%	48%	68%

Source: Statistics taken from 1959 Systems and Procedures Association (SPA) survey of 1146 companies, appearing in *The Profile of A Systems Man*, a booklet Published by the Systems and Procedures Association, Detroit, Michigan, March 1960, p.11.

carry out? A brief discussion of each position listed above will serve to provide partial answers to these questions.

The Systems Manager

The executive responsible for the management of the systems function should report to or be a member of top management. Ideally, he should have a broad knowledge of company operations, activities, and organization. He should also possess the following personal characteristics:

1. Administrative ability to establish basic policy, maintain positive relations with the various organizational units his staff is to serve, and select skilled systems personnel.
2. Supervisory ability, to properly direct his technical staff.
3. Excellent speaking and writing ability.
4. Technical competence to insure the maintenance of high work standards by the members of his staff.
5. Highly skilled in organization.
6. Tact and firmness—indispensable qualities.
7. Enthusiasm for systems work, which should be reflected in his actions.

As a staff executive who bears the responsibility for improving the entire organization, the systems manager must plan, organize, direct, and control the performance of his staff, so as to effect the most beneficial and lasting improvements in company organization and operations. The job description of the systems manager ordinarily constitutes the position guide which was developed in the course of defining the *functions* to be performed by the systems and procedures organization.

Senior Analysts

The senior analysts, usually men with four years' or more experience in systems work, bear the direct responsibility for the success of systems assignments. They conduct studies and investigations, develop proposals and procedures, indoctrinate company supervisors and operating personnel with the workings of the systems and procedures to be installed, and supervise the work of junior analysts.

Most systems specialists, e.g., forms designers, EDP analysts and programmers, etc., are classified as seniors.

Junior Analysts

The junior analyst is a person selected for the performance of systems and procedures work on the basis of his personal qualities such as analytical ability and creativeness. Indication of his potential abilities are garnered from a check of his academic and experience background.

The junior will usually work under the guidance of a senior analyst, who familiarizes him with systems and procedures work techniques and assigns him to detailed fact-finding studies. As a junior gains experience and knowledge, his responsibilities are expanded to the point where he is assisting the senior in new procedural and systems development, and writing the actual procedures.

The senior and junior analysts are the members of the systems and procedures team; the effective operation of this group can render it one of the most profitable elements of the entire organization, in terms of cost savings and economies which would be effected through its systems and procedural installations.

Once the required job descriptions for the systems and procedures personnel have been formulated, the actual selection of candidates may begin. In this regard, a discussion of the qualifications and characteristics desirable in personnel chosen to perform the systems and procedures function is in order.

Qualities of Systems and Procedures Personnel

What type of individual is best suited to perform systems and procedures work? What characteristics should he possess? How can a systems supervisor distinguish between those candidates likely to succeed, and those who will fail to achieve the desired results? How can an individual who is considering entry into the field measure his own qualifications for a systems position? There is no *single* "combination" of qualities which will always produce a successful systems analyst. Since some aspects of systems work constitute an

"art" rather than a science (for example, "selling" an antagonistic manager on a procedure or system which he dislikes or violently opposes), several combinations of the qualities discussed below will prove valuable in systems work.

Systems managers and other authorities in the field have listed the following qualifications as desirable for systems personnel:[14]

Analytical ability
Objectivity
Common sense
Technical competence
Skepticism and inquisitiveness
Human relations
Tact, sincerity, and humor
Speaking and writing ability
Initiative
Patience and stability
Creativeness
Enthusiasm
Educational proficiency

Each of these qualifications plays an important role in systems work. A brief explanation of each will therefore serve to clarify its relation to the successful conduct of systems and procedures activity:

Analytical Ability

The ability to probe the essential elements of a problem, eliminating or ignoring superfluous factors. The problem must be broken down into its essential components; then logical reasoning, involving an understanding of cause and effect relationships, must be used to reconstruct the basic elements into a more workable whole.

Objectivity

Open-minded, receptive to suggestions from others, flexible and unbiased. A systems man must be ready and willing to admit the superiority of proposals other than his own; he must sincerely and consistently give credit to other people for any contributions they make towards the improvement of the program on which he is working. He must be particularly careful to avoid formulating premature opinions.

Common Sense

The ability to keep one's perspective, to maintain the value and direction of his efforts. One writer, Joseph D. Cooper, has termed this quality "intuitive power"—the ability to see the implications of a proposal or situation, to sense what is appropriate in the absence of any specific, apparent reason.

Technical Competence

Familiarity with basic principles of organization and management, and also with the several systems and procedures techniques described in Part II. Appreciation of both *broadness* ("the big picture") and detail is necessary. Furthermore, "The systems analyst must have more than an appreciation for system . . . he must (also) have the capacity for seeking out a problem in all its analytical detail; he must brush off the quick answer that comes intuitively, collecting, rather, alternative possibilities and building from these alternatives a comparative scale as the basis for true measurement and logical selection."[15]

Skepticism and Inquisitiveness

The systems analyst must be a skeptic at heart, refusing to accept heresay information which lacks verification. His critical attitude must cover all procedures and operating methods. The questions, "Why is this done? Can't it be done a better way?" should always be in his mind. He must be naturally inquisitive and desirous of acquiring further knowledge.

Human Relations

The ability to get along with people is a "must". The systems man must understand people, sympathize with their problems, practice cooperation and teamwork effectively, and be able to convince people that his ideas are sound. In a word, he must possess "acute social intelligence."

14. A synthesis of qualifications listed or described by the following authors: Athearn, p. 16; Barish, pp. 300-301; Cooper, p. 61; Herrman, p. 6, and Lazzaro, pp. 437-439.

15. Organizing, p. 33.

Tact, Sincerity, and Humor

These qualities could be considered as human relations skills, but, because of their importance in systems and procedures work, are here considered separately.

Tact is an indispensable quality, for the simple reason that the systems man represents *change*, which is always resented and resisted by some managers and operating personnel.

Complete honesty, likewise, is indispensable. The delicate human relationships developed in the course of systems work can only be preserved in an atmosphere of honest, "straight from the shoulder" relationships.

Humor is the third essential, since frustrations are an inherent part of systems work. Without this "safety valve," a somber-minded systems man would soon become discouraged and lose his effectiveness.

Speaking and Writing Ability

Communication is the systems man's business. He must, then, be expert in the use of the primary communication tools—speaking and writing.

A good vocabulary is basic. This includes, especially, the ability to select and use the simplest terms to express any idea or instruction which is intended to be conveyed.

A systems man must, therefore, be able to express himself convincingly, clearly and precisely, both in his conversation and in his written presentations. To assure mutual understanding of facts and instructions and effective presentation of recommendations, surveys, and proposals, the facility to compose must be evident. One writer on this subject has suggested skill in the graphic arts as a desirable qualification, since graphic analysis and presentation can often clearly summarize, in easily understood form, many pages of complicated written material.[16]

Initiative

The ability to organize work and proceed without the need for detailed instructions—a "self-starter."

Patience and Stability

Since frustration is an inherent component of systems work, an almost paradoxical combination of patience and drive is necessary to enable the analyst to continue his work despite discouragements, defeats, and necessary compromises. Stability—the ability to work equally well under pressure and slack—is an obvious requisite, in view of the fact that the systems workload is so volatile.

Creativeness

The ability to develop and apply new ideas and concepts. The systems analyst must be resourceful and imaginative; he must be able to project himself into undiscovered fields and conceive schemes with future possibilities.

Enthusiasm

A sincere enthusiasm for, and interest in, systems and procedures work, considered in its proper perspective as the fundamental *service* unit for the entire organization, is a highly desirable trait. The essence of this quality is, in the writer's opinion, the desire to serve others—constantly keeping the concept of "service to the customer" in his mind.

Educational Proficiency

A college education is preferable, but not necessary. This characteristic is based upon the assumption that a college graduate has acquired the mental disciplines of fact gathering, organization and analysis, and the logical development therefrom of sound syntheses and conclusions.

Another aspect of this quality consists of the willingness and eagerness to constantly expand one's knowledge, through formal or informal study.

The qualities described above are intended to serve as "guidelines" for the selection of systems and procedures personnel.

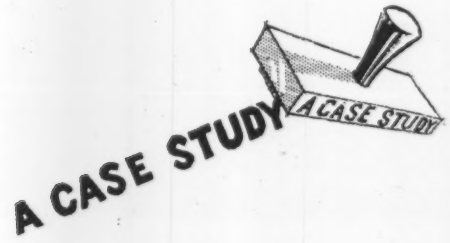
This last step—selection of the personnel component for the systems and procedures organization—completes the process of *organizing* the systems and procedures function.

In the next and final part, we will discuss the basics of *managing* and *operating* the systems and procedures organization. **s/p/a**

16. Barish, p. 301.

An Integrated Data Processing Application

Common Language Equipment Helps to Integrate and Simplify a Basic Operation



J. M. Otterbein

Before and After an I.D.P. Installation

● Five years ago, North American Life Assurance Company installed an I.D.P. system in its Group Administration Department. It is interesting now to view the problems encountered before the installation, how the installation was handled, what improvements have been made, and what benefits have been gained five years later. The following digest of the situation is taken from a paper presented by Mr. Burgar, Comptroller, at an annual Life Office Management conference.

The purpose of this paper is to describe the steps followed and some of the benefits derived in the development of an I.D.P. application for a group annuity business.

Integrated Data Processing

Integrated data processing might be defined as the union of parts or elements so as to form a complete, rounded out, perfect whole. It might also be defined as reproducing mechanically (automatically) data that are common to a series of steps in a complete, rounded out, perfect whole.

The idea presented in the first definition has always been a prime objective of any office system. The second definition results from the development of common language office machines.

Within tabulating departments the concept of integrated data processing is well established. The common language is the punched card produced in the initial step. It reproduces data mechanically and automatically through subsequent processing steps.

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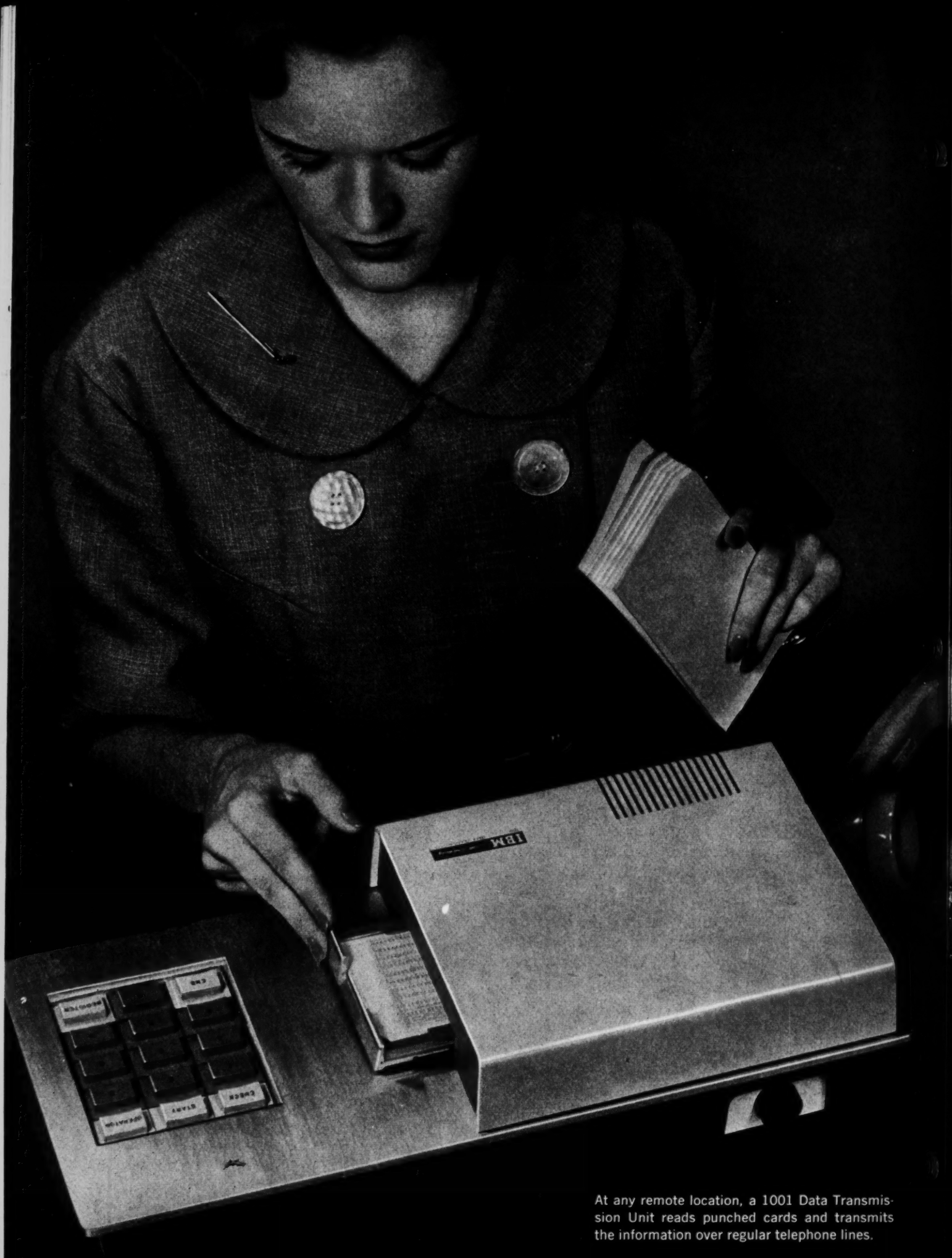
Mr. Otterbein is a member of the American Management Association as well as the Systems and Procedures Association. He has been a member of SPA since 1953 and has served as: Committee chairman, director, secretary, and president of the Toronto York Chapter.



At any remote location, a 1001 Data Transmission Unit reads punched cards and transmits the information over regular telephone lines.

IBM 1001 DATA TRANSMISSION SYSTEM ... new low-cost way to send punched card data ... by telephone

This IBM 1001 Data Transmission System lets you send business information in punched card form, from any office, plant or department to your central data processing installation at the cost of a telephone call.

It speeds collection of information concerning inventory, purchases, payroll, production, etc., keeps you continually informed of what's happening in your business while it's happening.

And it does it at low cost.

A simple, desk-top 1001 Data Transmission unit and telephone at each remote location plus a telephone and card punch at your data processing center put you in business. The operator at the remote unit dials the data processing center, inserts a punched card into the transmission unit, adds additional information with the simple keyboard, and presses a button.

The rest is automatic. The equipment reads the card, transmits the information over your regular telephone lines, and reproduces an identical punched card, ready for processing. You can connect a number of departments, plants, offices or customers with this 1001 Data Transmission System.

This is another example of IBM TELE-PROCESSING* Systems which help business act faster by speeding up collection of the facts on which action is based. TELE-PROCESSING Systems are available for coordination of anything from a warehouse to an entire company.

*Trademark

At the data processing center, an IBM Card Punch receives data by phone and automatically punches it into a card, ready for processing.

IBM®
DATA PROCESSING

Through the medium of the punched paper tape, other office machines are also geared now to operate from, and produce in, a common language medium. As a result, it is possible to integrate paper handling operations automatically from the receipt of raw data to the production of the end result—the complete, rounded out, perfect whole.

The Problem

When our data processing study was started, the annuity portion of the group business consisted of approximately 700 cases widely ranging in size and benefits and comprising some 16,000 certificates. The system for processing these had grown like Topsy with key personnel so busy training replacements, because of high turnover among clerical employees, that there was no time left to design new forms and develop coordinated procedures.

Launching the Study

The study started with a presentation of the survey *plan* and objectives to the department people. The methods to be used were explained. The analyst involved was introduced. Organization, job grades, and work relationships were discussed and job descriptions were prepared from individual interviews.

Charts

The details of existing organization and work procedures were presented in the following charts.

(a) *Organization* charts showing job grades, lines of responsibility, etc.

(b) *Work distribution* charts (see Figure 1).

(c) *Flow process* charts for individual jobs (see Figure No. 2).

WORK DISTRIBUTION CHART

ORGANIZATIONAL UNIT: Policy Issue Section

		Name W. M. Gordon	Name M. O'Regan	Name B. Harding	Name M. Freckleton
	Date Sept 1961	Position: Asst Manager	Position: Senior Clerk	Position: Junior Clerk	Position: Policy Writer
	Existing Organization	Grade	Grade 8	Grade 5	Grade
Activity Number	ACTIVITY	TASKS	TASKS	TASKS	TASKS
1	Assembly of forms and records (Life Health and Pension)	Receives forms from group sales records and arranges for underwriting. Sets up final cost. Sets up work sheet			
2	Preparation of Billings and Commission Notices and supporting records	Prepares Initial Billing, Summary Card (Pension) Checks life and Health billings etc. Checks record cards Prepares T510 for tax purposes			
3	Preparation of Contracts and Certificates	Writes pension contract Checks Life and Health Contracts Checks certificates and contracts after typing Writes amendments to manual if necessary			
4	Distribution of Records				

FIGURE 1

NORTH AMERICAN LIFE ASSURANCE COMPANY — FLOW PROCESS CHART No. Date

Operation / Transportation / Inspection / Delay — Distance - in Ft. — Time - in Secs.

5. Can it be improved - How?
4. Why this person - Anyone better?
3. Why now - Is there a better time?
2. Why here - Better elsewhere?
1. Why is it necessary - Eliminate?

Job: Assembly of form a records (Annuity)
Chart Begins: Set up of work sheet
Chart Ends: Sending of final cost to Calculation Section

	PRESENT PROCEDURE	1	2	3	4	5	NOTES
●	1. Staples a Work Sheet to the inside cover at the application folder	✓					Use 6 Part Control set
●	2. Writes on work sheet group name, number and date received		✓	✓	✓	✓	Entered by Gr. Sales on work control set
○	3. Checks enrolment cards for eligibility of applicants		✓		✓		Done by issue clerk in mathematics section
●	4. Sorts enrolment cards by date of birth, oldest first, all males in fron tof females		✓		✓		This work done on app. card set
●	5. Writes in red on enrolment cards, insurance age, group number and card number		✓		✓	✓	H/J cost sheet eliminated Ret. details completed
●	6. Heads up final cost sheet with group name and number	✓					By issue clerk to math clerk
●	7. Refers to application for retirement ages and enters cost details to retire of each	✓					Information added to control set by Prod. control
●	8. Also adds on final cost information from master application for assistance of calculation clerk	✓					Use control slip later in procedure
●	9. Notes data on work sheet inside application folder	✓					To Cal. Clerk
○	10. Takes final cost enrolment and application folder to calculation section						

FIGURE 2

(d) *Flow diagram* or multiple flow process charts (see Figure No. 3).

While gathering the facts for the study, several changes in routines were made where such changes could improve operations without prejudicing the final major revision; for example, an improved file reference and a control procedure were installed.

Analysis

The first step of the analysis itself was to study the organization structure and division of work. It was discovered that Topsy had assigned the responsibility for 25 of the 43 clerks to one of three supervisors. A need for a better distribution of work to overcome duplication and overlapping was also observed. For example, the calculating, billing, and accounting work on new cases was done in the issue section; specialists in the other sections handled these activities on renewals. It appeared that it would be more efficient if the work on new cases were also handled by these specialists. These changes established a new character for what was formerly the issue section and resulted in some physical rearrangement of staff with a redistribution of work.

Forms and Procedures

All the forms were studied for possible integration and simplification. The most frequently used forms contained common information which led to an investigation of the possibility of using a common language machine. Attendance at an integrated data

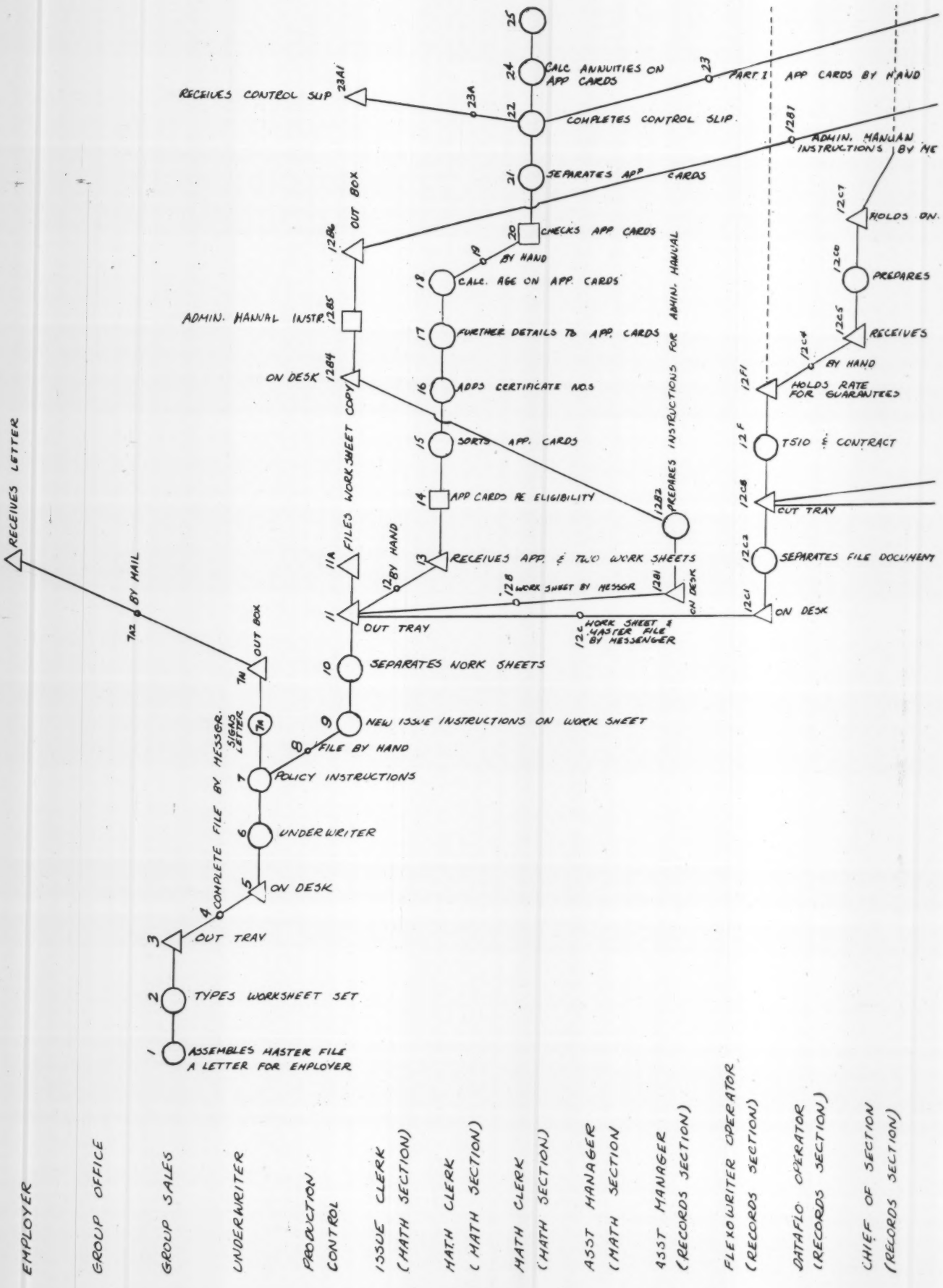

EMPLOYER
GROUP OFFICE
GROUP SALES
UNDERWRITER
PRODUCTION CONTROL
ISSUE CLERK (MATH SECTION)
MATH CLERK (MATH SECTION)
MATH CLERK (MATH SECTION)
ASST MANAGER (MATH SECTION)
ASST MANAGER (RECORDS SECTION)
FLEXOWRITER OPERATOR (RECORDS SECTION)
DATAFLO OPERATOR (RECORDS SECTION)
CHIEF OF SECTION (RECORDS SECTION)
ASSEMBLES MASTER FILE A LETTER FOR EMPLOYER
TYPES WORKSHEET SET
OUT TRAY
ON DESK
UNDERWRITER
POLICY INSTRUCTIONS
FILE BY HAND
NEW ISSUE INSTRUCTIONS ON WORK SHEET
SEPARATES WORK SHEETS
OUT TRAY
WORK SHEET & MASTER FILE BY MESSENGER
WORK SHEET BY MESSGR.
ON DESK
RECEIVES APP. & TWO WORK SHEETS
FILES WORK SHEET COPY
BY HAND
OUT BOX
BY MAIL
RECEIVES LETTER
SIGNS LETTER
COMPLETE FILE BY MESSGR.
ON DESK
ADMIN. MANUAL INSTR.
ON DESK
OUT BOX
BY HAND
CALC. AGE ON APP. CARDS
FURTHER DETAILS TO APP. CARDS
ADDS CERTIFICATE NOS
SORTS APP. CARDS
APP CARDS RE ELIGIBILITY
PREPARES INSTRUCTIONS FOR ADMIN. MANUAL
CHECKS APP CARDS
SEPARATES APP CARDS
COMPLETES CONTROL SLIP
CALC ANNUITIES ON APP CARDS
RECEIVES CONTROL SLIP
PART I APP CARDS BY HAND
ADMIN. MANUAL INSTRUCTIONS BY HE
HOLDS ON.
PREPARES
RECEIVES
BY HAND
HOLDS RATE FOR GUARANTEES
TS10 & CONTRACT
OUT TRAY
SEPARATES FILE DOCUMENT
ON DESK

FIGURE 3

processing workshop provided information about such machines. Eventually a tentative procedure was installed, using a Flexowriter. At the same time, the senior supervisor of the group department was relieved of his line duties in order to help the planning analyst integrate the forms and procedures. Frequent conferences were held with the operating officer about innovations. It was here that the flow diagrams (see Figure 3) proved valuable in presenting a comprehensive picture of the existing procedures for analysis and of the proposed procedures for consideration. A narrative report, no matter how skillfully prepared, would have been ineffectual by comparison.

Machines

In studying the possibility of using other equipment in the integrated procedures, a sample case was prepared which illustrated our record-keeping needs. The calculation and other steps in the procedure were outlined and submitted to three machine suppliers. Copies of the new forms were also sent. Each supplier was asked to assess the feasibility of our proposed procedures and to tell us how his equipment might fit into the situation.

It was finally decided to install one Flexowriter and one Dataflo unit with two slaves. The data tape was to be initiated on the Flexowriter; the Dataflo to prepare record cards, cost statements, and certificates from the tape.

A significant advantage of such integration is the increased accuracy and the elimination of checking work when subsequent records are automatically reproduced from a verified tape. This means one typing and checking of policy particulars compared with four independent typing and checking operations in the old procedure. Estimates were that the typing pool would be able to handle 30 per cent more work. It was further estimated that we could give our customers and sales people better service because of the greater ease of producing clear and accurate records.

Control

Under the old procedure, all the operations were under one supervisor. The new system provides for the handling of certain operations by specialists in other sections. This necessitates control.

A six-part carbon set was developed for this purpose. The upper portion contains a summary of the application details. It is prepared in the head office Group Sales Department. Special instructions to the particular section receiving copy are written by hand on the lower portion of each form.

All copies have perforated slips which must be completed at specified points in the procedure. The slips are forwarded to a production control unit, where the status of work in process is watched.

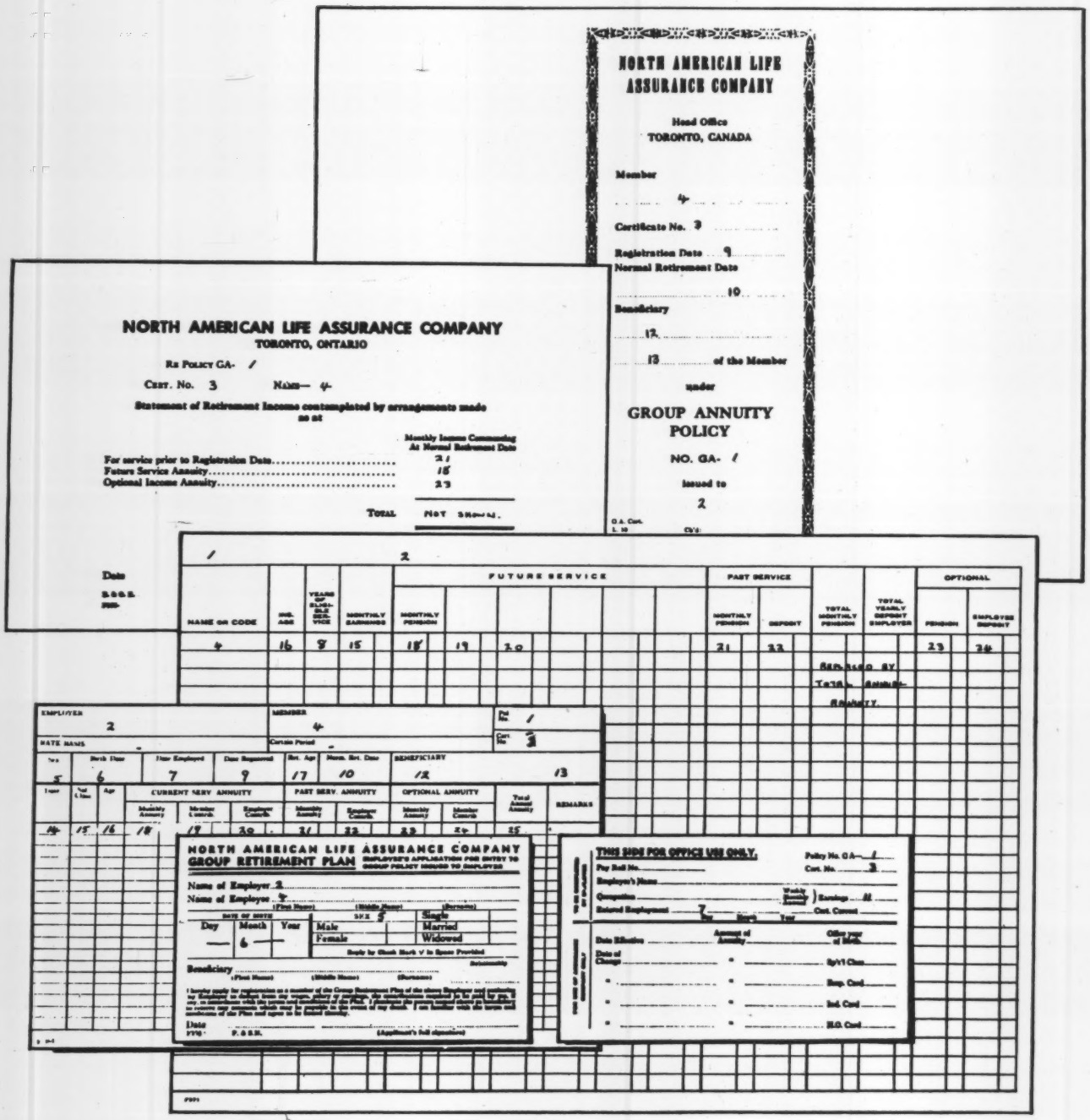
Examples of Integration

Some interesting aspects of the procedures are shown in Figures 4 and 5. Figure 4 shows the forms in use before integration with the sequence of information as it appears on the revised forms. Figure 5 shows the proposed forms. The record card (Figure 5) contains the basic information about the certificate holder. This comes from the signed application card—a two-part form. It is used as a work sheet for the initial calculation of annuity benefits and costs and replaces a handwritten valuation data sheet used in the old procedure for key-punching the valuation cards. With a tape-to-card converter, manual key-punching and verification can, in fact, be eliminated.

Preparation of the cost statement has, therefore, been simplified. The old system involved a combined hand-written and typing operation requiring many tab stops. This can be eliminated. The statement will be produced automatically as a by-product of record cards prepared from the punched tape.

One form will serve both as the member's statement of annuity and his certificate. The certificate will be renewed every year. This makes the renewal procedure the same as the issue, allowing automatic production of the forms.

FORMS IN USE BEFORE INTEGRATION



NORTH AMERICAN LIFE ASSURANCE COMPANY

Head Office
TORONTO, CANADA

Member 4

Certificate No. 3

Registration Date 9

Normal Retirement Date 10

Beneficiary 12

13 of the Member

under

GROUP ANNUITY POLICY

NO. GA- 1

Issued to 2

NORTH AMERICAN LIFE ASSURANCE COMPANY
TORONTO, ONTARIO

Re Policy GA- 1

Cert. No. 3 Name— 4

Statement of Retirement Income contemplated by arrangements made as at

	Monthly Income Commencing At Normal Retirement Date
For service prior to Registration Date	21
Future Service Annuity	18
Optional Income Annuity	23
TOTAL	NOT SHOWN.

Date

1 2

NAME or CODE	Ins. Age	Years of Elig. Service	Monthly Earnings	FUTURE SERVICE Monthly Pension						PAST SERVICE Monthly Pension	Deposit	Total Monthly Pension	Total Yearly Deposit Employer	OPTIONAL Pension	Employee Deposit
4	16	8	15	18	19	20				21	22			23	24

REMARKS

EMPLOYER 2 MEMBER 4

RATE NAME Certain Period

Sex	Birth Date	Date Employed	Date Registered	Ret. Age	Norm. Ret. Date	BENEFICIARY	
5	6	7	9	17	10	12	13

Date	Ret. Date	Age	CURRENT SERV. ANNUITY Monthly Annuity	Member Contrib.	Employer Contrib.	PAST SERV. ANNUITY Monthly Annuity	Employer Contrib.	OPTIONAL ANNUITY Monthly Annuity	Member Contrib.	Total Annual Annuity	REMARKS
14	15	16	18	19	20	21	22	23	24	25	

NORTH AMERICAN LIFE ASSURANCE COMPANY
GROUP RETIREMENT PLAN EMPLOYEE'S APPLICATION FOR ENTRY TO GROUP POLICY ISSUED TO EMPLOYER

Name of Employer 2

Name of Employee 4 (First Name) (Middle Name) (Surname)

DATE OF BIRTH: Day — Month 6 — Year — SEX 5: Male / Female

Single / Married / Widowed

Reply by Check Mark √ in Space Provided

Beneficiary (First Name) (Middle Name) (Surname) Relationship

Date (Applicant's full signature)

THIS SIDE FOR OFFICE USE ONLY

Policy No. GA— 1

Pay Roll No. Cert. No. 3

Employee's Name

Occupation Weekly Earnings 15

Retired Employment 7 Day Month Year Cert. Covers

Date Effective Amount of Annuity Office year of Mbr.

Date of Change Sp'l Class

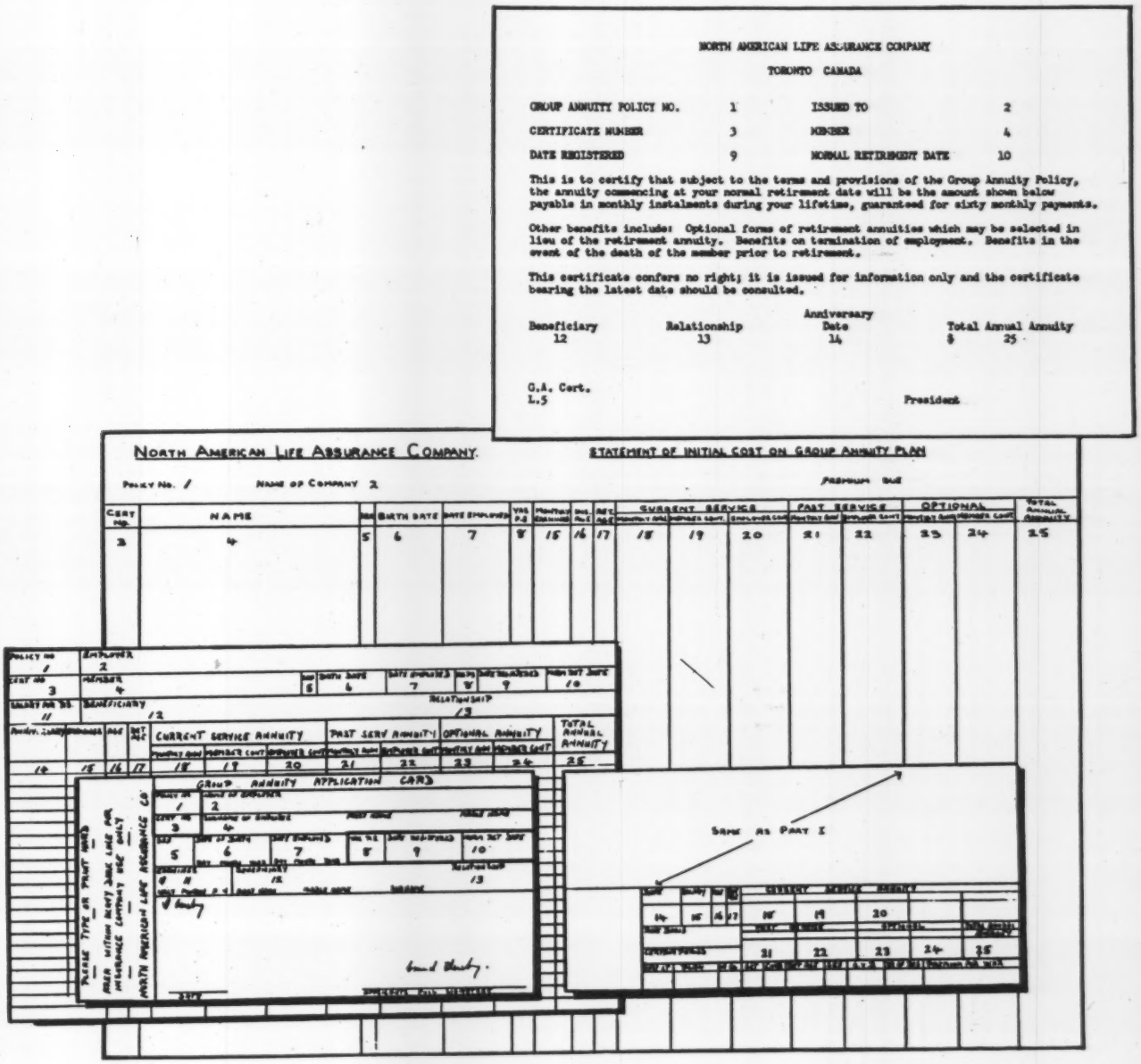
Reg. Cont.

Ind. Cont.

H.O. Cont.

FIGURE 4

FORMS AFTER INTEGRATION



NORTH AMERICAN LIFE ASSURANCE COMPANY

TORONTO CANADA

GROUP ANNUITY POLICY NO.	1	ISSUED TO	2
CERTIFICATE NUMBER	3	MEMBER	4
DATE REGISTERED	9	NORMAL RETIREMENT DATE	10

This is to certify that subject to the terms and provisions of the Group Annuity Policy, the annuity commencing at your normal retirement date will be the amount shown below payable in monthly instalments during your lifetime, guaranteed for sixty monthly payments.

Other benefits include: Optional forms of retirement annuities which may be selected in lieu of the retirement annuity. Benefits on termination of employment. Benefits in the event of the death of the member prior to retirement.

This certificate confers no right; it is issued for information only and the certificate bearing the latest date should be consulted.

Beneficiary	Relationship	Anniversary Date	Total Annual Annuity
12	13	14	$ 25

G.A. Cert.
L.5

President

NORTH AMERICAN LIFE ASSURANCE COMPANY

STATEMENT OF INITIAL COST ON GROUP ANNUITY PLAN

Policy No. 1 Name of Company 2

CERT No.	NAME	SEX	BIRTH DATE	DATE EMPLOYED	YRS P.S.	MONTHS	DAYS	AGE	CURRENT SERVICE			PAST SERVICE		OPTIONAL		TOTAL ANNUAL ANNUITY
3	4	5	6	7	8	15	16	17	18	19	20	21	22	23	24	25

GROUP ANNUITY APPLICATION CARD

PLEASE TYPE OR PRINT WORD
AREA WITHIN HEAVY BLACK LINE FOR INSURANCE COMPANY USE ONLY
NORTH AMERICAN LIFE ASSURANCE CO

SAME AS PART I

FIGURE 5

Filing Tapes

The problem of filing individual tapes was also studied. The basic record, an 8″ by 5″ card, is typewritten with subsequent, hand-posted entries. The cards are in a continuous form with marginally punched and perforated edges. As they are typed, every second one is left blank. At this time, a by-product punched tape is also produced.

The cards are separated into sets of two; a blank and a typed card. A strip of book binding glue from a plastic dispenser is put down the center and along all but one edge of the reverse side of the blank card. The set of two cards is folded and pressed together back to back, forming two pockets. The perforation on one edge is notched and, when removed, forms a slot which makes it easy to remove tape.

Participation

The need for cooperation and assistance from all members of the department concerned in a study of this type is vital. The group supervisor should continue active cooperation with the analyst through at least part of the period of implementation of the new procedures.

The assistance of our Public Relations Department was enlisted in preparing the initial presentation of the study to the members of the department. Our aim, of course, was to have everyone understand the advantages of a new system and to appreciate the increased opportunity for individual abilities and job satisfaction. Visual aids, oral presentations, and written bulletins were used.

Supervisors were provided with job manuals, flow process charts, flow diagrams, and work distribution charts. These were also useful tools in training new staff, allocating and controlling work, and developing further improvements in the procedures.

Summary

The integration and simplification of all the parts of a system is the basic aim of systems and procedures analysis. Integrated data processing and common language equipment are ways of helping reach this basic aim in certain types of data processing procedures.

* * * * *

Accepting Change

Most systems men have experienced the type of acceptance of *change* which very shortly proves to be only "surface" agreement. When faced with the problems inherent in any change-over, all absence of sincere acceptance shows itself in various ways: dissatisfaction, open or hidden resentment, frustration, low morale, passive resistance, rumors, and destructive criticism.

Systems men are searching constantly for the type of whole-hearted acceptance that enables everyone, from a supervisor to a file clerk, to face with determination, confidence, and enthusiasm the problems and pressures of both the change-over period and the early stages of a new system.

One of the greatest barriers to effective acceptance of change is the attitude of the people themselves. They must be prepared, but this part of a systems program is often neglected. Great care is taken in designing forms, selecting machines, and developing procedures—on the drawing board—but not enough care is paid to developing interested participation among employees who will be most affected by the new items.

Picture Presentation

The following series of pictures is *part* of a program which was used to develop interest in the new integrated system described above.

Conclusion

We are happy to report that there has been virtually complete acceptance of the change by all those affected by it. We feel that this result has amply repaid the time and effort spent on the "educating" phase of the installation.

Since the installation of the system, the number of group plans in force has grown to approximately 1,100 with 31,000 certificates, almost doubling the volume.

Figure 6 . . . here is a little man selected to represent a group annuity application being assembled in group sales.

Figure 7. Here's how the new system works. Six identical control forms replace the master application, and where the master application would go through each phase of the process, these forms carry information to various sections of the department where specific work can be done simultaneously.

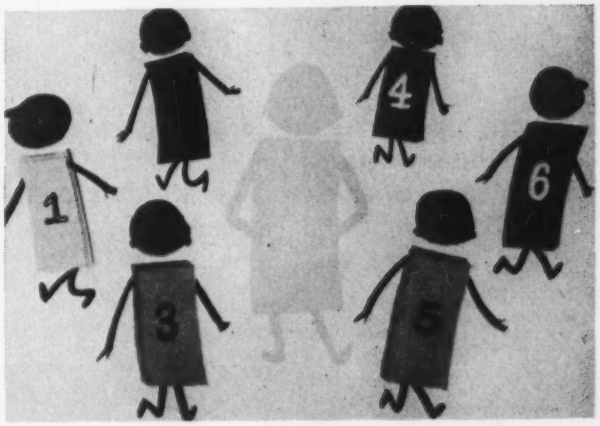


Figure 8. Part 1 of the control set is sent to group sales as a register of applications and for any necessary follow-up.

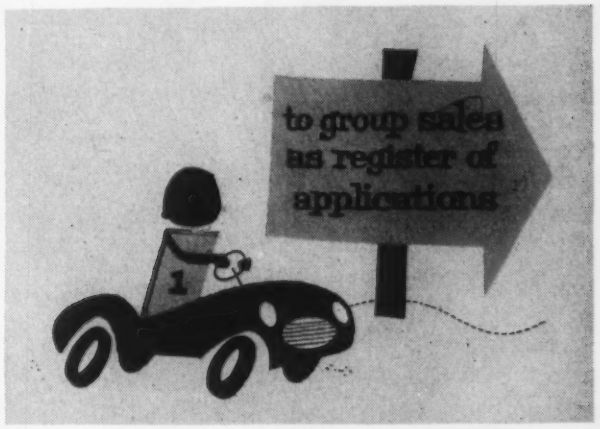
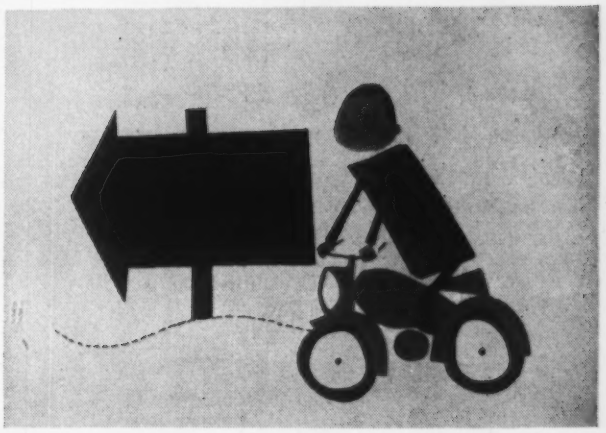


Figure 9. Part 2 goes to production control, who from this point is in constant contact with every phase of the procedure.



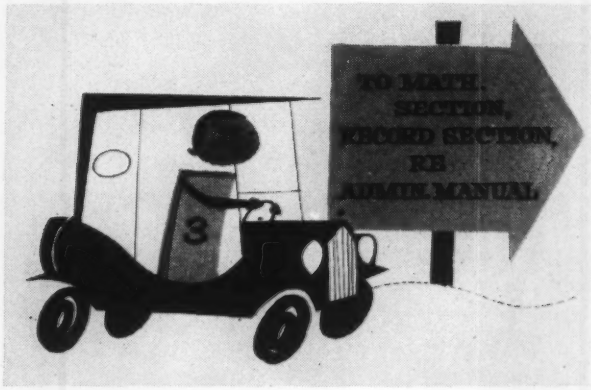


Figure 10. Little Man No. 3 goes to the math clerk who enters page codes on him and passes him to the records section for preparation of the employer's manual.

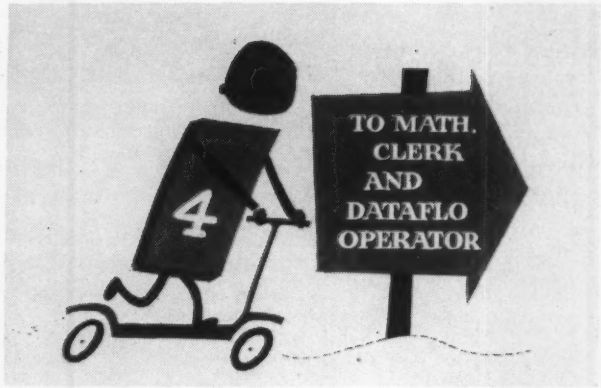


Figure 11. While this goes on, No. 4 is having the benefits and costs for individual lives calculated, the totals of which are entered on the control form. These totals are checked and are then sent to the dataflo operator.

Figure 12. In the meantime, No. 5 has also gone to the math section where the premium and annuity totals are filled in for billing purposes.

Figure 13. And here's No. 6 who winds up with the assistant manager of the records section. The contract is written, a T510 prepared and then No. 6 goes to the Flexowriter operator for the production of policy summary cards. **s/p/a**

How Methods Improvement Can Increase Your Profit Margin

Much Needs to be Done to Curb Clerical Expenses

Theodore C. Strauss

● Management must give more attention to widening the profit margin. One fertile focal point is the clerical work force, a group that continues to grow. Official statistics of the United States Department of Labor indicate that the white-collar work force grew from 24,585,000 to 28,507,000 between 1955 to 1960, an increase of about four million. The prediction is that by 1970, white-collar workers will be 37 million. On the other hand, studies of the *production* of office workers report a decrease in efficiency.

Clerical expense takes a bite out of profit. Something must be done to decrease and control the size of this bite. For numerous reasons, lower levels of management "do nothing about it" even when they know their sections are overstaffed or that their people are riding the "gravy train." This attitude is indeed unfortunate, for it affects the Nation's overall production. More attention must be given the problem. One approach—one way to reduce clerical expense — is through a vigorous, effective *Methods Improvement Program.*

Methods Improvements

Methods Improvement is to determine by analysis, the most efficient and economical way to do a job. A few of the important objectives of a methods improvement program are:

1. To improve existing methods of operation by *simplifying essential work, combining like work,* and *eliminating unnecessary work.*
2. To use available manpower skills effectively.
3. To develop a formula, for management, for determining staffing requirements and control.
4. To supply management with timely and accurate information needed for intelligent decisions.

Many supposedly good methods improvement programs are concerned primarily with dollar savings and only secondarily or not

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at all with improving methods. For this reason, many programs fall by the wayside. To be successful a program should hold as a primary goal the improvement of present *methods* of operation.

Setting Up A Program

An essential goal in any program of methods improvement is to secure top management's backing and cooperation. Before a program is launched, management must be thoroughly sold on its purpose and value. Without management's backing and cooperation, a program cannot succeed.

Fact Gathering

In starting a methods improvement program, it is best to let management decide in which area to begin. Otherwise, when the decision is left to the methods department, the question is likely to be asked, "Why did you pick on our department? Why not department "A"? Hence, the program starts on a negative tone.

Once the first department to be studied is identified, the head should be consulted about a meeting date. The purpose of the meeting is to give the head insight into the purpose of the study, its scope, and an outline of a tentative plan of attack. Subsequent steps are to obtain:

1. A floor plan layout of the department.
2. Recent copy of the job organization chart, showing names, job titles, etc.
3. Functional organization chart with a brief statement of each function.
4. Copies of procedures being followed.
5. Copies of forms originated or worked on in the department.
6. Summary of conditions as seen by the departmental head.

To keep a study running smoothly, departmental heads should introduce methods personnel to operating personnel, telling them *why*, *what*, etc. This introduction is important, for it reduces confusion and panic at interviews and prepares the operating personnel so that they can gather information needed at the interview.

After being introduced to the head and operating personnel and after securing necessary background information, determine and evaluate the following:

1. What are the duties and responsibilities of each job?
2. Who does the job? What education and experience is required?
3. How is the work done? Can essential work be simplified; unnecessary work eliminated?
4. How much work is done? What frequencies and distribution?
5. How long should the work take?

Job Transaction Sheet

There are several ways to secure the above information. One of the most successful is to have operating people complete a "Job Transaction Sheet" (It lists functions and forms; estimate volumes and time used for each). This information later serves as a basis for the interview.

After the "Job Transaction Sheets" have been collected, you are ready to interview. The purpose of the interview is to verify the information on the Job Transaction Sheet and catch omissions. When interviewing the operating people, it is important to put them at ease in some way so that full and accurate information can be obtained. If full cooperation and confidence are not secured, inadequate data may result in poor recommendations and conclusions. Therefore, do not scare those being interviewed. Show interest in whatever they tell you, no matter how small the problem may be, and for gosh sakes—*listen*. A methods man must be a good listener.

Questions

When obtaining pertinent information about methods of operation, pay attention not only to the way an employee thinks his job should be done, but also the way the head thinks it should be done; the way the head *told* the employee to do it; the way the

procedure says it should be done; and—most important of all—the way it is actually being done. During an interview, use the following questions about each of the activities performed:

1. *Why* is the work being done?
2. *What* would happen if it were elimnated?
3. *Can* it be combined with other operations?
4. *Where* is the work coming from?
5. *When* is the work being done?
6. *What* forms are used or initiated?
7. *Where* does the work go from here?
8. *Where* is the work filed?

While determining *how* a job is performed, also gather information about work volume. Are there existing production records? Where are they filed? Are they accurate and up-to-date? Other ways to get this information are as follows:

1. Batch counts.
2. Historical data.
3. A two- or three-week record, kept by the operating people themselves, of items you want to count.

No matter which approach is used, it is generally advisable to verify the information with the department head. Often he is not aware of the amount of work processed in his department so if nothing else, he will be interested in the information gathered. After the information has been "approved" by the head, the analyst proceeds to study the frequency, distribution, format, and necessity of each item. Frequently we find that those who receive copies of forms and reports do not need them, no longer use them, or the item received has been supplanted.

Staffing

After pertinent data have been gathered, it is possible to determine staffing requirements.

$$\frac{\text{Volume of Work} \times \text{Work Standard}}{\text{Hours per man Day}} =$$

No. of Employees Required
(This must be adjusted by vacations, absences, etc.)

Staffing needs can be estimated only when total volume of work and average production per employee are known. Then, it is a mere problem of dividing total volume of work by average production per employee. (See Exhibit No. 1).

Workload Analysis

Section _____

Process _____

Volume

600/mo.

Prod/Empl.

200/mo.

Employees required _____ 3

Employees now assigned _____ 5

Employees not required _____ 2

EXHIBIT 1

Standards

In order adequately to justify clerical cost reduction, it is necessary to determine how long it *should* take to do a job. To establish work standards, obtain observation samples of people with average ability. This insures that resultant standards *can* be attained. When sampling, be sure to get enough observations to justify standards which are established. To a large extent, the number necessary depends on the judgment of the analyst. The more observations, the better the standard.

Analysis

After the necessary data are gathered, organize them. What do they mean? Are they accurate? Are they complete? Such questions must be answered to avoid mistakes in the recommendations and conclusions. Common pitfalls to avoid are:

1. Tendency to jump to conclusions.
2. Failure to discuss the facts gathered with the group studied.
3. Tendency to form early conclusions and try to make later findings support these prejudices.

A few pertinent items to consider during organizational analysis of data are scheduling and *leveling* workload, work flow, and manpower requirements.

When analyzing the scheduling of the workload, be concerned with maximizing productive time and with eliminating lost time as much as possible. This is facilitated by changing batch size, work assignments, physical layout, and organization. Exhibit No. 2 illustrates that when processing a given batch of work within a required period of time, one is confronted with *waits*—lost time. Lost time must be minimized; productive time maximized.

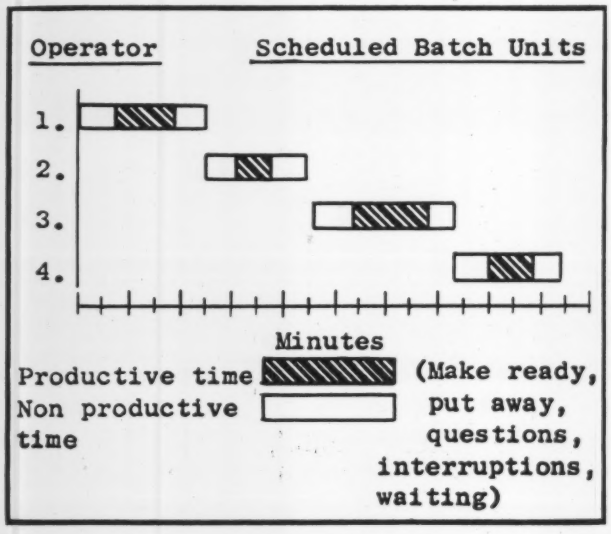


EXHIBIT 2

When analyzing leveling of a workload, consider eliminating peak periods of work, and spreading the work over a given period of time based on some average daily requirements. This has a direct affect on staffing. Do we staff a section for peak periods or do we try to spread work, borrow employees from other units, and combine assignments now performed by different teams?

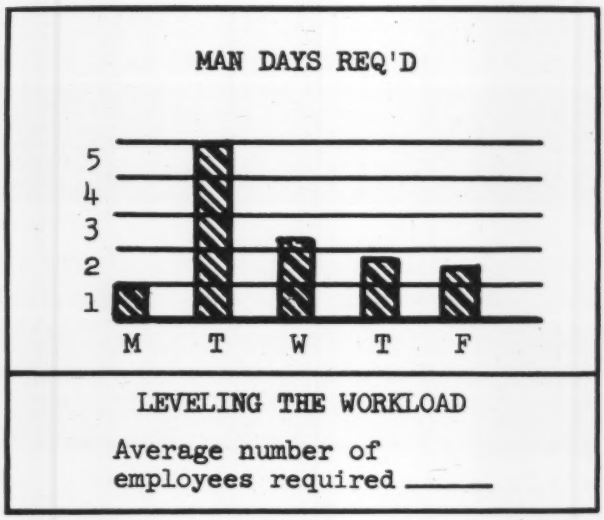


EXHIBIT 3

When analyzing work flow, consider:

1. Is there back-tracking?
2. What is the total distance travelled?
3. Are people who work together located together?
4. Is layout easy to supervise?

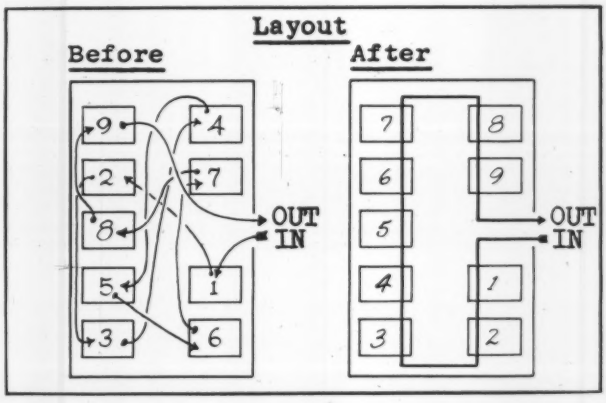


EXHIBIT 4

Presentation of Recommendations

A very important final step of a methods study, is to present the findings.

This means selling the ability of the analyst as well as the results of the study. Areas of principal interest to the departmental head and his operating people are:

1. Eliminating overtime.
2. Improving working conditions.
3. Reducing amount of work.
4. Upgrading of job classification.
5. Simplifying work methods and procedures.
6. Changing layout to enhance work flow and scheduling.
7. Assigning more suitable duties and responsibilities to those who should receive them.

When the analyst is convinced of the completeness and validity of his conclusions, he is ready to discuss his recommendations with the department head. It must be remembered that the initial presentation is a preliminary report for the purpose of receiving the department head's approval. After the recommendations and conclusions have been reviewed, and the department head has given his approval or suggested changes, the final report may be prepared. The length of the report depends upon the nature and scope of the survey, the size of the investigation, and the amount of selling required.

Once a report has been prepared and distributed, the analyst should be ready to provide any assistance needed (in the department) to put recommendations into effect.

An installation should be planned and tested before the change-over date. It should be outlined in detail to insure complete and effective results.

After "installation" it is advisable to set tentative dates for subsequent review, evaluation, and adjustment.

Conclusion

Much needs to be done to curb clerical expenses. A program similar to the one outlined in this article is a step in the right direction. **s/p/a**

BOOK REVIEWS

Systems & Procedures

Anthony Ross

The Arithmetic of Automatic Computers, *by Norman A. Crowder; Doubleday and Company, Garden City, N.Y., 472 pp., 1960, $3.95.*

If you read this book and understand the short simple explanations it presents, you will begin on page 1. There the similarity between this kind of book and others stops. From page 1 you will go to page 4, then successively to pages 34, 30, 10, 29—and so on until the circuitous route takes you to page 460, the last. This book is a TutorText, representing one of the two major approaches to the slowly-evolving methods of automatic or programmed teaching.

The word "programmed" here provides a key to understanding what this technique of teaching is. We write a computer program—for a payroll procedure, for example—in such a way that the set of data for each employee in turn is taken into the computer and subjected to a series of tests and processing operations. The results of the first test encountered in the program determine the next processing operation. This processing in turn may contain tests of its own which will advance or branch the data-set to another program portion, and so on until the peculiar characteristics of each employee's data have specified their own proper path through the program to the correct end result—in this example, net pay.

Ideally, the theory states, teaching could subject the student automatically to the same kind of highly individualized treatment. Frequent tests would be provided, the results

of which would specify exactly what each particular student should be taught next. Exposure to new material should be in small and simple amounts, with each exposure followed by a test to determine whether the student has learned the new material and retained what was taught before. If yes, he should advance; if no, he should return to a given spot in the program and work through again. If he cannot learn past a given spot in the program he will find himself in a closed loop requiring—as in a computer program—exception handling.

One approach to automatic teaching is to provide the students with a specialized teaching machine programmed to attain the desired end through two-way communication with students. The other approach is that represented by Mr. Crowder and the TutorText, a one-way communication of a textual presentation with the answer to each question determining the page on which the next material to be read appears. Each page presents a short section of material followed by a question about it and a choice of answers. The reader selects an answer to the question, then turns to the designated page to learn if his answer is right or wrong and to find the next material to be learned or reviewed.

"The presentation of material in this book," states the Preface, "approximates, as nearly as possible, a conversation between a teacher and his pupil." The pupil here will find himself fortunate to have a teacher of Mr. Crowder's talents. The presentation is fresh and simple. There is a twinkle in the teacher's eye (possibly because he is not being subjected to the apathy and ignorance represented in the usual classroom group) which appears in such admonitions to the wrong-answerer as "You aren't paying attention," "I'm afraid you don't understand all you know about this subject!", and "That's the spirit! If you don't know, speak up."

Curiously, one thing is missing from the TutorText approach which is supplied by the standard page-to-next-page format of the usual book—the sense of accomplishment and progress which results from the slow transfer of pages from the unread to the read piles. The reader may experience slight impatience over being rewarded for a correct answer by being sent back 40 pages to continue on. It is also a bit difficult to return to a TutorText after a long period of time and pick up where you left off, on a page which starts off saying, "You are correct."

Aside from these minor annoyances, using a TutorText is easily digestible learning which provides a guarantee on completion that you have actually learned.

The subject matter is a thorough presentation of the mechanics of number systems and computer arithmetic. In addition, it provides a thorough and simple brush-up course in the oft-forgotten basic algebra which is prerequisite to understanding computer arithmetic. The student will also gain an insight into the basic logic of computer functioning through EXAC (from EXample Automatic Computer), and a broad basic computer vocabulary. Major attention is to the octal number system, its relationship to the decimal system and to binary notation. An appendix of self-test questions, one set for each of the 15 lessons, is provided.

Whether the TutorText approach will evolve into a permanently accepted component of automatic teaching methods need not concern us. This particular book is fascinating to read and a very useful addition to the library of basic systems literature. (*Reviewed by Richard W. Pomeroy; Lincoln Square Chapter, SPA.*)

Electronic Data Processing: An Introduction, *by E. Wainright Martin, Jr.; Richard D. Irwin, Inc., Homewood, Illinois; 423 pp., 1961, $10.60.*

This is possibly the best introductory work to the subject of electronic data processing that has yet come to the attention of this reviewer. Clear, uncomplicated, it is at the same time well constructed and well balanced. Most important, it is extremely effective in communicating the essentials of EDP to the reader. The book provides a reasonable compromise between technical material and discussions of general implications, with major emphasis upon the concepts involved. However, there is enough specific material included to make the concepts meaningful.

After an introductory chapter on the impact of the electronic computer, there are

three clear chapters presented on the fundamentals of data processing, and punched card data processing. The text then moves into the basic concepts of electronic computers and devotes two chapters to describing the programming elements and process of the IBM 650. Additional chapters develop topics in the areas of developing computer processing systems, application of drum machines, large electronic data processing machines, processing magnetic tape files, and random access files.

For those readers to whom the technical aspects of these areas hold no interest, there are several chapters concluding the text from which they may derive some satisfaction. These chapters describe the realistic problems distilled from an extensive study of case histories in the areas of systems analysis and design, problems involved in introducing a computer, the data processing organization, and management responsibility toward information technology. These last chapters should be worth their weight in gold to any analyst who can use them in getting their message across to management. (*Reviewed by Richard W. Reynolds, Lincoln Square Chapter, SPA.*)

Landmarks of Tomorrow, *by Peter F. Drucker —Harper & Brothers, New York, 270 pp., 1957, $4.50*

This in undoubtedly one of the best books of past and current management/business philosophy. It is a light on the way to tomorrow, for as the author states, "At some unmarked point during the last twenty years we imperceptibly moved out of the Modern Age and into a new, as yet nameless era . . ."

Furthermore, he also defines the recentness of the departure of the 'Modern Age' when he states, "The old view of the world, the old tasks and the old center, calling themselves 'modern' and 'up-to-date' only a few years ago, just make no sense any more."

These two basic theses of this work are best defined in the following: "We thus live in an age of transition, an age of overlap, in which the old 'modern' of yesterday no longer acts effectively but still provides means of expression, standards of expectations, and tools of ordering, while the new, the 'post-modern,' still lacks definition, expression, and tools but effectively controls our actions and their impact."

The most rewarding sections of Mr. Drucker's opus are to be found in Chapter Two, section 3, "Innovation—The New Conservativism"; Chapter Three, section 2, "From Magnate to Manager"; Chapter Five, section 1, "The Educational Revolution"; and Chapter Seven, section 1, "The End of The Liberal State" and section 2, "The New Pluralism". These sections are of significant value to any truly professional subscriber of the Management Concept. The other chapters and sections are of essential value and should be read *and* understood in order to grasp the totality of the two theses being propounded—and validated.

The organization of the book is orderly, rational, and progressive. Mr. Drucker uses a simple, clear, and concise style. This reviewer ardently and enthusiastically recommends this book as an essential for all readers of this magazine. (*Reviewed by Mortimer J. Sullivan; Lincoln Square Chapter, SPA.*)

Managing America's Economic Explosion, *by Dan H. Fenn, Jr.; McGraw Hill Book Co., Inc., New York, 269 pp., 1961, $6.00.*

This stimulating book is a recording of the 30th Annual Harvard Business Conference and presents noteworthy discussions by 22 leading executives, economists, and related experts. The subjects explored include some of the most vital questions facing the American economy today such as broad issues of economic growth and the specifics of product-line planning, new trends in marketing, foreign competition, and long-range company strategy.

It would be hard to understand how any systems man who aims realistically to improve his image as an internal management consultant—or who intends just as realistically to develop an effective, and profitable career for himself in an unparallelled age of growth—would not devour, with impatient, hungry appetite, the concepts and insights afforded by this book. To quote from the preface by Mr. Fenn: "There is an urgency about these times which we have not yet

recognized; there is a time fuse sputtering, buried but not extinguished by the mush of complacency, which we have not yet heard." The internal consultant, to be effective as a *consultant*, must be aware of the developing trends and unbelievable complexity of factors that form the overall external environments surrounding internal organization.

The oft-times provocative—but always authoritative—views presented in this volume will cause the average executive reader to think along brand new lines. He will find exciting, fresh material on inflation, government partnership in business, and problems of remaining competitive in a world of changing markets and marketing conditions. (*Reviewed by Richard W. Reynolds; Lincoln Square Chapter, SPA.*)

Modern Production Management, *by Elwood S. Buffa, Ph. D.; John Wiley & Sons, Inc., N.Y., 636 pp., 1961, $10.25.*

This book, written to reflect the changes that have occurred recently in production management, is an excellent text for undergraduate students or those in business who wish to brush up on newer techniques. Significant developments in management science, industrial engineering, and operations research, have brought about new concepts in the manner which a business can be run most profitably. Furthermore, present day competition and the trend to computer applications puts more emphasis on the use of the scientific approach to business management and this book covers essentially every aspect of the problem.

As a text it is exceptionally complete and includes the treatment of many unexpected topics. Computers, linear programming, inventory, and quality control are all subjects adequately reviewed. But, the facts and details contained in the sections on physical facilities, plant location, working environment, and work methods analysis are unusual in their advanced approach. The chapter on statistical methods is well presented and instructive without attempting to substitute for a complete course on the subject. The material is sufficient to inform the reader without requiring a broad mathematical background, and for those who care to delve deeper into such matters the appendices provide further data.

The references listed are carefully selected recent publications. Many of them are recognized in management circles as basic source data for the particular subject. This contact with current thinking is evident in every chapter of the book.

The almost exclusive use of examples pertaining to "hard goods" manufacture results in some loss of interest for readers not engaged in this field. Also, the real versatility of the doctrines presented might be recognized more easily if the author had used one or two other industrial types to exemplify his points. This is in no way a serious criticism and students of the methods presented can in all probability convert the solutions to their own specific field. (*Reviewed by P. J. Quinn, Assistant to Plant Manager, Shulton, Inc.*)

Practical Problems in Business Statistics, (2nd Edition), *by Dudley J. Cowden, and Mercedes S. Cowden; Prentice Hall Inc., Englewood Cliffs, New Jersey, 1960, $4.25.*

This is a revised workbook to be used in conjunction with *Practical Business Statistics* (3rd Edition).

The workbook and text were compiled by two indisputable authorities on business statistics. The revised workbook is an obvious improvement over the previous one in that there are fewer exercises (reduced from forty to thirty problems amounting to still more material than could be adequately covered in a one-semester course) and the exercises are arranged in order of complexity. The first exercises indoctrinate the user of the books to the fundamentals of statistical reasoning and from that point on the situations are increasingly more difficult. The use of the workbook and text will provide experience in work with population, samples, the concept of bias, statistical inference, random sampling, etc.—all of which should be as fundamental to the systems professional's "black kit" of knowledge as the techniques of forms design and flow charting. (*Reviewed by John R. Youngs, Lincoln Square Chapter, SPA*) **s/p/a**

EDITORIAL

THE ADMINISTRATIVE PROCESSES

● During the post-war years there has been a steady increase in the cost of the administrative processes. If we include managerial, technical and professional, and clerical and sales as part of the administrative force, we are talking about almost one-half of the personnel employed in industry today and about 60 per cent of the total payroll.

Much of the increased cost during the past ten years has been due to a decline in output per payroll dollar. But most of the increase has been due to management's refusal to be seriously concerned with what many of them consider to be simply a necessary evil. In the years ahead, however, the success of a company will depend to a major extent on management's ability to understand and properly use the administrative processes.

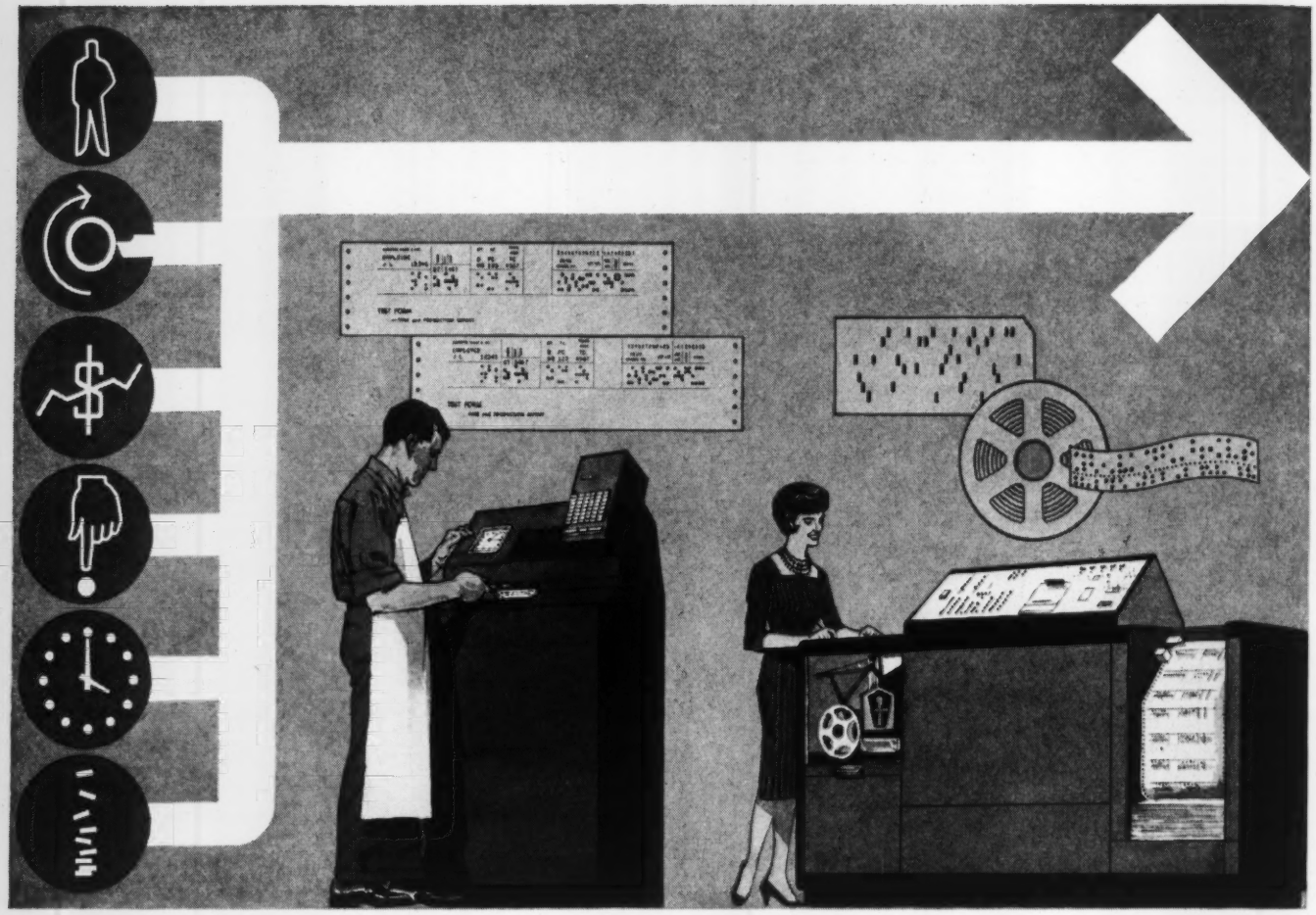
One of the surest signs of immaturity in corporate management is preoccupation with administrative "cost reduction." Few managements seem to be sophisticated enough to recognize that a contribution to profits cannot always be achieved through "cost reduction" routines and some of the specious reasoning that goes with them. Typical of the lack of management understanding are the decisions to make huge investments in what amounts to the emotional appeal of electronics. Such installations are usually justified on the grounds of "cost reduction." But they usually serve to perpetuate and enlarge upon paperwork systems which have already reached a high level of ineffectuality.

Only about 25 per cent of administrative time is essential to the purely operational conduct of the average business. The question, then, is what profit contribution, if any, either short or long range, is being made by the creative and managerial 75 per cent. To answer this management must learn to take a more intelligent look at the administrative processes. It must understand that any time a change is made in one process it is bound to affect, to a greater or lesser degree, all of the other administrative work. It must realize that reducing paperwork can increase oral communication and vice versa; that a reduction in clerical and secretarial personnel can result in more work for more costly administrative or technical personnel.

Management must also learn to evaluate the administrative processes by *function* and to determine how much a particular function costs and how much it contributes to short and long-range profit goals. It must understand the value of quality in the administrative processes and recognize that low salaries in these processes are usually synonymous with high costs.

Many of our administrative routines have been handed down from academic scribblings. It is about time that management recognized this and devoted a little imagination and creative effort towards the improvement of administrative work. We suggest that this is where the greatest profit opportunities exist today. **s/p/a**

(*Don Titus, member, Empire State Chapter, Systems and Procedures Association*).



STANDARD REGISTER
STANOMATIC SYSTEM

Now... completely automatic source data handling... factory floor to final reports

The big news in automatic data acquisition ahead of data processing is Standard Register's revolutionary Stanomatic System.

Now, instead of the usual manual methods of recording information pertaining to labor distribution and production control, it is possible to gather and record it mechanically for conversion to punched tape, magnetic tape or punched cards for subsequent machine accounting.

Starting point is the original event (circles in above chart) concerning — man, operation, order, variable data, time and production.

The information required about each event is recorded on the Stanrecorder by means of embossed plates, punched cards, time clock and keyboard. The Stanrecorder automatically prints in both man-readable and machine-readable language on a 2-part continuous form.

A copy of this coded form is next fed into the Stanomatic Reader-Translator which prepares the data for machine processing. (In companies with relatively small production volume, this job can be accomplished by manual key-punching of tabulating cards using the form prepared in the Stanrecorder as the source document.)

Source data pertaining to labor distribution and production control are automatically accumulated for fast, accurate, complete processing. But going farther, the Stanomatic System provides bonus advantages. The worker can have his own copy of each transaction he records. A complete, permanent chronological audit trail is provided by which every transaction can be quickly reconstructed. And management receives faster, more accurate, more comprehensive reports.

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1961 INTERNATIONAL SYSTEMS MEETING

OCTOBER 8-9-10-11, 1961

HOTELS STATLER-HILTON AND PICK-CARTER

Cleveland, Ohio

Theme: The Systems Field—A Managment Transition

PROGRAM: Panorama . . . Conference Sessions . . . Seminars . . . all planned to be the most informative possible for all those who are interested in Systems and Procedures.

SUNDAY, OCTOBER 8 (For SPA Members)

Open SPA Board of Directors Meeting

Chapter Improvement Clinic (CHIP) — a most interesting program for Chapter Members

Social Hour

MONDAY, OCTOBER 9

Keynote Address

Exhibition Hall Opening

Luncheon

Selected Program (Panorama, Conference Sessions, Seminars)

Hospitality Evening

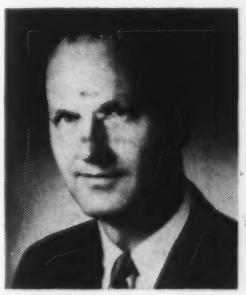
TUESDAY, OCTOBER 10

Selected Program

Luncheon

Selected Program

Annual ISM Banquet



GEORGE E. GARNSEY
General Chairman

WEDNESDAY, OCTOBER 11

Selected Program

Luncheon

Final General Session

ADDED FEATURES:

Circles of Knowledge (informal round-tables) will run concurrent with selected programs

Exhibits will be open October 9-11

Ladies Program

For Registration Forms, program details, and additional information, write to David S. Joseph, International Systems Meeting, P.O. Box 6175, Cleveland 1, Ohio.